

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:13-cv-418	DATE FILED 5/22/2013	U.S. DISTRICT COURT ~~Eastern District of Texas~~ <i>Arizona</i>
PLAINTIFF <i>CV-14-2070-TMC-DTF</i> Cheetah Omni LLC		DEFENDANT NP Photonics, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,633,673	12/15/2009	Cheetah Omni LLC
2 7,433,116	10/7/2008	Cheetah Omni LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT <i>6/16/14 order granting stipulation to dismiss.</i>

CLERK <i>Brian D. Karth</i>	(BY) DEPUTY CLERK <i>[Signature]</i>	DATE <i>6/13/14</i>
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

)

ORDER

1 action and the entry of this Stipulation and Order of Dismissal.

2 Dated this 5th day of June, 2014.

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A handwritten signature in black ink, appearing to read "D. Thomas Ferraro", is written over a horizontal line.

D. Thomas Ferraro
United States Magistrate Judge

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court District of Arizona on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 4:14-cv-2070-TUC-DTF	DATE FILED 5/7/2014	U.S. DISTRICT COURT District of Arizona
PLAINTIFF Cheetah Omni LLC		DEFENDANT NP Photonics, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,633,673	12/15/2009	Cheetah Omni LLC and Omni Continuum LLC
2 7,433,116	10/7/2008	Cheetah Omni LLC and Omni Continuum LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
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5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Brian Karth	(BY) DEPUTY CLERK C. Evans 	DATE 5/9/2014
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:13-cv-418	DATE FILED 5/22/2013	U.S. DISTRICT COURT Eastern District of Texas
PLAINTIFF Cheetah Omni LLC		DEFENDANT NP Photonics, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,633,673	12/15/2009	Cheetah Omni LLC
2 7,433,116	10/7/2008	Cheetah Omni LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133

109543
Brooks, Kushman P.C./Cheetah Omni MedSci
1000 Town Center
Twenty Second Floor
Southfield, MI 48075

CONFIRMATION NO. 3187
POA ACCEPTANCE LETTER



Date Mailed: 03/18/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/pasmall/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133

5073
BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

CONFIRMATION NO. 3187
POWER OF ATTORNEY NOTICE



OC000000059632441

Date Mailed: 03/18/2013

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2013.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/pasmall/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number:

109543

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

109543

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

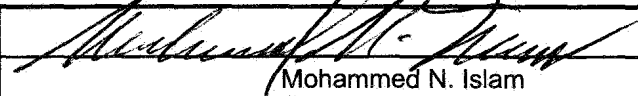
Assignee Name and Address:

Cheetah Omni, LLC, 1718 Newport Creek Drive, Ann Arbor, MI 48103

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	October 10, 2012
Name	Mohammed N. Islam	Telephone	734-353-9333
Title	Manager		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	14844261
Application Number:	10812608
International Application Number:	
Confirmation Number:	3187
Title of Invention:	INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER
First Named Inventor/Applicant Name:	Mohammed N. Islam
Customer Number:	5073
Filer:	David S. Bir/Theresa Good
Filer Authorized By:	David S. Bir
Attorney Docket Number:	074036.0133
Receipt Date:	01-FEB-2013
Filing Date:	30-MAR-2004
Time Stamp:	09:08:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73.	sb0096.pdf	423058 d2657cc5ee563a5fe7628027d79094cda5b b8ea3	no	2

Warnings:

Information:

2	Power of Attorney	PTO_SB_80_CHOM.pdf	1085415	no	1
			e741c3b128128b631353bb3121682102a7 bcd618		
Warnings:					
Information:					
Total Files Size (in bytes):				1508473	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Cheetah Omni, LLC

Application No./Patent No.: 7433116 Filed/Issue Date: October 7, 2008

Titled: INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER

Cheetah Omni, LLC, a limited liability corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 014768, Frame 0143, or for which a copy therefore is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/David S. Bir/
Signature

January 31, 2013
Date

David S. Bir
Printed or Typed Name

Attorney
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	10/07/2008	7433116	074036.0133	3187

5073 7590 09/17/2008
BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 557 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Mohammed N. Islam, Ann Arbor, MI;

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
 or **Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

5073

7590

05/28/2008

BAKER BOTTS L.L.P.

2001 ROSS AVENUE

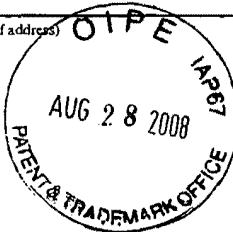
SUITE 600

DALLAS, TX 75201-2980

08/29/2008 WASFAW2 00000005 10812608

01 FC:2501

720.00 OP



Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
Via Certified Mail (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187

TITLE OF INVENTION: INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$0	\$0	\$720	08/28/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
HELLNER, MARK	3663	359-334000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev. 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Baker Botts L.L.P.

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Cheetah Omni, LLC

Ann Arbor, MI

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☒ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 02-0384 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Date

Typed or printed name Brian J. Gaffney

Registration No. 51,712

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

ATTORNEY DOCKET NO.
074036.0133



PATENT APPLICATION
10/812,608

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Filed: March 30, 2004
Group No.: 3663
Examiner: Mark Hellner
Notice of Allowance Mailed: May 28, 2008
Confirmation No.: 3187
Title: **INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER**

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that the attached Issue Fee Transmittal (PTOL-85) (one (1) page), Cheetah Omni Check No. 1003, and Response to Reasons for Allowance (one (1) page) are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 28th day of August, 2008 addressed to Mail Stop ISSUE FEE, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Willie Jiles

Willie Jiles

Express Mail Receipt

EV732541752US



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
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NOTICE OF ALLOWANCE AND FEE(S) DUE

5073 7590 05/28/2008

BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

EXAMINER

HELLNER, MARK

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 05/28/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,608

03/30/2004

Mohammed N. Islam

074036.0133

3187

TITLE OF INVENTION: INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$0	\$0	\$720	08/28/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

5073 7590 05/28/2008

BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187

TITLE OF INVENTION: INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$0	\$0	\$720	08/28/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
HELLNER, MARK	3663	359-334000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187
5073	7590	05/28/2008	EXAMINER	
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			HELLNER, MARK	
			ART UNIT	PAPER NUMBER
			3663	
DATE MAILED: 05/28/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 499 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 499 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/812,608

Applicant(s)

ISLAM, MOHAMMED N.

Examiner

Mark Hellner

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to terminal disclaimer filed 2/20/2008.
2. ☒ The allowed claim(s) is/are 1-3,5-17,20,21,23-32,36-39 and 52-64.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Notice of Informal Patent Application |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. ☐ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☐ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other ____. |

/Mark Hellner/
Primary Examiner, Art Unit 3663



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UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 Alexandria, Virginia 22313-1450
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BIB DATA SHEET

CONFIRMATION NO. 3187

SERIAL NUMBER 10/812,608	FILING or 371(c) DATE 03/30/2004 RULE	CLASS 606	GROUP ART UNIT 3663	ATTORNEY DOCKET NO. 074036.0133		
APPLICANTS Mohammed N. Islam, Ann Arbor, MI; ** CONTINUING DATA ***** This application is a CON of 10/757,341 01/13/2004 PAT 7,259,906 which is a CON of 10/652,276 08/29/2003 ABN which claims benefit of 60/408,025 09/03/2002 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 06/07/2004						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/MARK HELLNER/</u> Examiner's Signature		☒ Met after Allowance <u>/MH/</u> Initials	STATE OR COUNTRY MI	SHEETS DRAWINGS 8	TOTAL CLAIMS 45	INDEPENDENT CLAIMS 3
ADDRESS BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980 UNITED STATES						
TITLE INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER						
FILING FEE RECEIVED 610	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	644	islam.in.	US-PGPUB; USPAT	OR	OFF	2008/01/21 12:37
L2	3	wavelength with shift\$	US-PGPUB; USPAT	OR	OFF	2008/01/21 12:37
L3	30640	wavelength with shift\$	US-PGPUB; USPAT	OR	OFF	2008/01/21 12:37
L4	97	1 and 3	US-PGPUB; USPAT	OR	OFF	2008/01/21 12:38

1/21/08 12:50:59 PM

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Index of Claims



Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	5/21/08									
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Claim		Date									
Final	Original	5/21/08									
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Search Notes

Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under
Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

SEARCHED

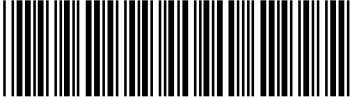
Class	Subclass	Date	Examiner
359	333 334	5/21/2008	/MH/
372	6	5/21/2008	/MH/

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner
359	333 334	5/21/2008	/MH/
372	6	5/21/2008	/MH/

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
East Text	5/21/2008	/MH/

Issue Classification 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/812,608	ISLAM, MOHAMMED N.	
	Examiner	Art Unit	
	Mark Hellner	3663	

ISSUE CLASSIFICATION												
ORIGINAL					CROSS REFERENCE(S)							
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)						
359		333			359	334						
INTERNATIONAL CLASSIFICATION					372	6						
H	0	1	S	3/00								
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				/								
(Assistant Examiner) (Date) (Legal Instruments Examiner) (Date)					/Mark Hellner/ Primary Examiner AU 3663 5/21/2008 (Primary Examiner) (Date)					Total Claims Allowed: 45		
										O.G. Print Claim(s) 1	O.G. Print Fig. 9B	

☐ Claims renumbered in the same order as presented by applicant												☐ CPA		☐ T.D.		☐ R.1.47	
Final	Original		Final	Original		Final	Original		Final	Original		Final	Original		Final	Original	
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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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5/ 21/ 08 12:03:52 PM

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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	752	((359/333) or (359/334) or (372/6)).CCLS.	US-PGPUB	OR	OFF	2008/05/21 12:05
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L3	116	1 and 2	US-PGPUB; USPAT	OR	OFF	2008/05/21 12:06

5/ 21/ 08 12:08:00 PM

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Filing Date: March 30, 2004
Art Unit: 3663
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical
Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Response pursuant to 37 C.F.R. § 1.111

In response to the Office Action mailed January 28, 2008, Applicant respectfully requests the Examiner to reconsider the rejection of the claims in view of the following remarks.

IN THE CLAIMS

1. (Previously Presented) An infrared light source, comprising:

one or more combiners coupled to at least a first pump laser operable to generate a first pump signal and a second pump laser operable to generate a second pump signal, the one or more combiners operable to combine the first pump signal and the second pump signal into a first optical signal, the first pump signal comprising at least a first wavelength and the second pump signal comprising at least a second wavelength, wherein the first wavelength of the first pump signal is substantially different than the second wavelength of the second pump signal; and

a wavelength shifter coupled to the one or more combiners, the wavelength shifter comprising a first waveguide structure and a second waveguide structure, the wavelength shifter operable to receive the first optical signal and to wavelength shift at least a portion of the first optical signal based at least in part on a Raman effect, wherein the wavelength shifter operates to wavelength shift at least the first wavelength to an intermediate optical wavelength in the first waveguide structure and to wavelength shift the intermediate optical wavelength to a longer optical wavelength in the second waveguide structure;

wherein at least a portion of the intermediate optical wavelength is greater than the first wavelength and wherein at least a portion of the longer optical wavelength is greater than the intermediate optical wavelength; and

wherein the first waveguide structure is substantially different than the second waveguide structure.

2. (Previously Presented) The infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

3. (Previously Presented) The infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber.

4. (Canceled)

5. (Previously Presented) The infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber.

6. (Previously Presented) The infrared light source of Claim 1, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

7. (Previously Presented) The infrared light source of Claim 6, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second pump signal.

8. (Previously Presented) The infrared light source of Claim 7, wherein the multiplexer is selected from the group consisting of a wavelength division multiplexer, a polarization multiplexer, and a power combiner.

9. (Previously Presented) The infrared light source of Claim 1, wherein the second wavelength of the second pump signal is selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm, and 1510 nm.

10. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

11. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

12. (Previously Presented) The infrared light source of Claim 1, wherein a variation of the first wavelength of the first pump signal causes a variation in the longer optical wavelength.

13. (Previously Presented) The infrared light source of Claim 1, wherein the one or more combiners are selected from the group consisting of a wavelength division multiplexer and a power coupler.

14. (Previously Presented) The infrared light source of Claim 1, wherein the first waveguide structure is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

15. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the first waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

16. (Previously Presented) The infrared light source of Claim 1, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least a portion of the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

17. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

18. (Canceled)

19. (Canceled)

20. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the second waveguide structure comprises an optical fiber, wherein the optical fiber is selected from the group consisting of a mid-infrared optical fiber, a chalcogenide fiber and a ZBLAN fiber.

21. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is an optical waveguide comprising a material selected from the group consisting of ZBLAN, sulfide, selenide, and telluride.

22. (Canceled)

23. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength comprises a wavelength of approximately 1.7 microns or more.

24. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

25. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength comprises a wavelength in the range of five (5) microns to seven (7) microns.

26. (Previously Presented) The infrared light source of Claim 1, further comprising a wavelength separator coupled to the wavelength shifter and capable of transmitting at least a portion of a selected wavelength from the wavelength shifter.

27. (Previously Presented) The infrared light source of Claim 26, wherein the wavelength separator is selected from the group consisting of a demultiplexer, one or more partially transmissive gratings, one or more partially transmitting mirrors, one or more Fabry Perot filters and one or more dielectric gratings.

28. (Previously Presented) The infrared light source of Claim 1, further comprising at least a third waveguide structure coupled to the wavelength shifter, wherein a coupling loss between the third waveguide structure and the wavelength shifter comprises no more than five (5) decibels.

29. (Previously Presented) A method of shifting an optical wavelength to a longer optical wavelength, comprising:

combining a first pump signal generated by a first pump laser and a second pump signal generated by a second pump laser into a first optical signal, the first pump signal comprising at least a first wavelength and the second pump signal comprising at least a second wavelength, wherein the first wavelength of the first pump signal is substantially different than the second wavelength of the second pump signal;

receiving the first optical signal at a wavelength shifter, the wavelength shifter comprising a first waveguide structure and a second waveguide structure, wherein the first waveguide structure is substantially different than the second waveguide structure;

shifting at least the first wavelength to an intermediate optical wavelength using the first waveguide structure based at least in part on a Raman effect;

shifting the intermediate optical wavelength to a longer optical wavelength using the second waveguide structure; and

wherein at least a portion of the intermediate optical wavelength is greater than the first wavelength and wherein at least a portion of the longer optical wavelength is greater than the intermediate optical wavelength.

30. (Original) The method of Claim 29, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

31. (Previously Presented) The method of Claim 30, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second pump signal.

32. (Previously Presented) The method of Claim 29, wherein the second wavelength of the second pump signal is selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Previously Presented) The method of Claim 29, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least a portion of the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

37. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength comprises a wavelength of approximately 1.7 microns or more.

38. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

39. (Previously Presented) The method of Claim 29, further comprising transmitting at least a portion of a selected wavelength from the wavelength shifter into a third waveguide structure.

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (Canceled)

47. (Canceled)

48. (Canceled)

49. (Canceled)

50. (Canceled)

51. (Canceled)

52. (Previously Presented) The method of Claim 29, wherein the first waveguide structure is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

53. (Previously Presented) The method of Claim 29, wherein the second waveguide structure is selected from the group consisting of a chalcogenide fiber and a ZBLAN fiber.

54. (Previously Presented) The method of Claim 29, wherein at least a portion of the second waveguide structure is an optical waveguide comprising a material selected from the group consisting of ZBLAN, sulfide, selenide, and telluride.

55. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a diagnostic procedure to detect tissue abnormalities.

56. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength is further coupled to a medical device adapted for insertion into a patient's body through an orifice in the body.

57. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use to ablate tissue with reduced collateral damage.

58. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a differential spectroscopic measurement based at least in part on a comparison of measurements taken from different portions of a sample.

59. (Previously Presented) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a measurement based at least in part on a comparison of a plurality of wavelengths transmitted through a sample.

60. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength is adapted for use in a diagnostic procedure to detect tissue abnormalities.

61. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength is further coupled to a medical device adapted for insertion into a patient's body through an orifice in the body.

62. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength is adapted for use to ablate tissue with reduced collateral damage.

63. (Previously Presented) The method of Claim 29 wherein the longer optical wavelength is adapted for use in a differential spectroscopic measurement based at least in part on a comparison of measurements taken from different portions of a sample.

64. (Previously Presented) The method of Claim 29, wherein the longer optical wavelength is adapted for use in a measurement based at least in part on a comparison of a plurality of wavelengths transmitted through a sample.

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed January 28, 2008. To advance prosecution of this application, Applicant is concurrently filing a Terminal Disclaimer. Applicant submits that all of the pending claims are in a condition of allowance. Applicant respectfully requests reconsideration, further examination, and favorable action in this case.

The Non-Statutory Double Patenting Rejection

The Examiner has rejected Claims 1-3, 5-17, 20-21, 23-32, 36-39, and 52-64 under the judicially created doctrine of obviousness-type double patenting over Claims 1-28 of U.S. Patent No. 7,259,906 B1 issued to Islam (“Islam”). The Examiner provides that a timely filed terminal disclaimer in compliance with 37 C.F.R. 1.321(c) may be used to overcome this rejection. Without conceding the veracity of any obviousness-type double patenting rejection, and solely for the purpose moving this case expediently to issuance, Applicant files herewith a Terminal Disclaimer obviating the double patenting rejection.

No Waiver

All of Applicant’s arguments are without prejudice or disclaimer. By not responding to additional statements made by the Examiner, Applicant does not acquiesce to the Examiner’s additional statements.

CONCLUSION

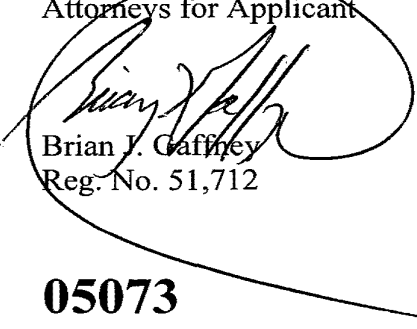
Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests reconsideration and full allowance of all pending Claims.

Filing concurrently herewith is a Terminal Disclaimer. Applicant believes no fee for this Response is due; however, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

If the Examiner feels that a conference would advance prosecution of this Application in any manner, Brian J. Gaffney stands willing to conduct such a telephone interview at the convenience of the Examiner. Mr. Gaffney may be reached at 214-953-6682.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant


Brian J. Gaffney
Reg. No. 51,712

Date: Feb. 20, 2008

Customer No.

05073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Appln. Serial No.: 10/812,608
Date Filed: March 30, 2004
Art Unit: 3663
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE
PATENTING REJECTION (37 C.F.R. §1.321 (c)) AND
CERTIFICATE UNDER 37 C.F.R. §3.73 (b)**

I, Mohammed N. Islam, as Founder and CTO of Cheetah Omni, LLC, 647 Spring Valley Drive, Barton Hills Village, Ann Arbor, Michigan 48105, represent that Cheetah Omni LLC is the assignee and the exclusive owner of the entire right, title and interest of, in and to Application Serial No. 10/812,608, filed on March 30, 2004, for "System and Method for Voice Control of Medical Devices," as indicated by the Assignment Records of the U.S. Patent and Trademark Office as follows at Reel 014768 and Frame 0143, and certify that to the best of assignee's knowledge and belief, title is in the assignee seeking to take action; and that I am empowered to act on behalf of assignee.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. Furthermore, I declare that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the Application or any patent issuing thereon.

Cheetah Omni, LLC hereby disclaims the terminal part of any patent granted on the above-identified application, that would extend beyond the expiration date of U.S. Patent No. 7,259,906 B1 granted August 21, 2007, also assigned to and owned by said Cheetah Omni,

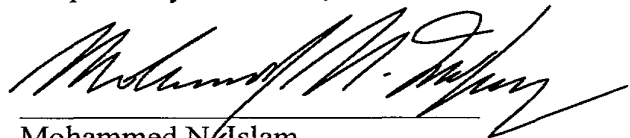
LLC as indicated by the Assignment Records of the U.S. Patent and Trademark Office at Reel 014958 and Frame 0371, and hereby agree that any patent so granted on the above-identified application shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to United States Patent No. 7,259,906 B1, this agreement to run with any patent granted on the above-identified application and to be binding upon the grantee, its successor or assigns.

Petitioner, however, does not disclaim any terminal part of any application allowed or patent granted on any of the above-identified application prior to the expiration of the full statutory term of the above-referenced U.S. Patent No. 7,259,906 B1, in the event that one or more of the following occurs: U.S. Patent No. 7,259,906 B1 expires for failure to pay a maintenance fee, is held unenforceable, is found invalid, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. 1.321(a), has all claims canceled by a reexamination certificate or are otherwise terminated prior to expiration of the statutory term as presently shortened by any terminal disclaimer, except for the separation of legal title stated above.

The Commissioner is hereby authorized to charge the fee for filing this Terminal Disclaimer to Deposit Account No. 02-0384 of Baker Botts L.L.P. The Commissioner is also authorized to charge any additional fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

2/19/08
Date

Respectfully submitted,


Mohammed N. Islam
Founder and CTO

Electronic Patent Application Fee Transmittal

Application Number:	10812608			
Filing Date:	30-Mar-2004			
Title of Invention:	INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER			
First Named Inventor/Applicant Name:	Mohammed N. Islam			
Filer:	Brian J Gaffney/Elizabeth Turlo			
Attorney Docket Number:	074036.0133			
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Statutory disclaimer	2814	1	65	65
Extension-of-Time:				
Page 40 of 239				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				65

Electronic Acknowledgement Receipt

EFS ID:	2883769
Application Number:	10812608
International Application Number:	
Confirmation Number:	3187
Title of Invention:	INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER
First Named Inventor/Applicant Name:	Mohammed N. Islam
Customer Number:	5073
Filer:	Brian J Gaffney/Elizabeth Turlo
Filer Authorized By:	Brian J Gaffney
Attorney Docket Number:	074036.0133
Receipt Date:	20-FEB-2008
Filing Date:	30-MAR-2004
Time Stamp:	11:43:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$65
RAM confirmation Number	7360
Deposit Account	020384
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		0740360133roa.pdf	388525 7609e0a3385ae15b3dbf33e8c881116b2d0a9911	yes	11
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment - After Non-Final Rejection		1	1	
	Claims		2	9	
	Applicant Arguments/Remarks Made in an Amendment		10	11	
Warnings:					
Information:					
2	Terminal Disclaimer Filed	0740360133td.pdf	90278 b160fdb09c71efb34d3bb589d6d23d648c3ef4d3	no	2
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8160 1d40e136a858493728a9021871bb0ed903f4b852	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			486963		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 10/812,608		Filing Date 03/30/2004		☐ To be Mailed	
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APPLICATION AS FILED – PART I					OTHER THAN				
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR		RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A				N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A				N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A				N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =				X \$ =		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =				X \$ =		
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
			TOTAL				TOTAL		

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II					OTHER THAN						
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	02/20/2008	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 45	Minus	** 45	=	X \$ =				X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	=	X \$ =				X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))										
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
						TOTAL ADD'L FEE				TOTAL ADD'L FEE	

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =				X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =				X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))										
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
						TOTAL ADD'L FEE				TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/GLORIA ANTHONY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187
5073	7590	01/28/2008		
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			EXAMINER HELLNER, MARK	
			ART UNIT 3663	PAPER NUMBER
			NOTIFICATION DATE 01/28/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com
glenda.orrantia@bakerbotts.com

Office Action Summary	Application No. 10/812,608	Applicant(s) ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-17, 20, 21, 23-32, 36-39 and 52-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-17, 20, 21, 23-32, 36-39 and 52-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 5-17, 20, 21, 23-32, 36-39 and 52-64 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 7,259,906. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-28 recite structure that teaches the elements recited by the claims of the present application. The difference in the claims of the present application is that a first and second pump of differing wavelengths be input to a combiner before the combined signal is input to the wavelength shifter. Claims 1-28 of USPN 7,259,906 recite a pump laser. It was notoriously well known to use combined pumps to stimulate a Raman device for

Art Unit: 3663

purposes of redundancy or bandwidth expansion, thus allowing the recited pump laser to suggest the difference in the claims of the present application.

Response to Arguments

Applicant's arguments with respect to claims 1-3, 5-17, 20, 21, 23-32, 36-39 and 52-64 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Mark Hellner at telephone number 571 272 6981.

/Mark Hellner/

Primary Examiner, Art Unit 3663

Notice of References Cited	Application/Control No. 10/812,608	Applicant(s)/Patent Under Reexamination ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,259,906	08-2007	Islam, Mohammed N.	359/334
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under
Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

x	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	1/21/08									
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Search Notes

Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under
Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

SEARCHED

Class	Subclass	Date	Examiner
359	333, 334	1/21/2008	/MH/
372	6	1/21/2008	/MH/

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
East Text	1/21/2008	/MH/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Filing Date: March 30, 2004
Art Unit: 3663
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical
Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Response pursuant to 37 C.F.R. § 1.111

In response to the Office Action mailed August 28, 2007, Applicant respectfully requests the Examiner to reconsider the rejection of the claims in view of the following amendments and remarks. Please amend the Application as follows:

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An infrared light source, comprising:

one or more combiners coupled to at least a first pump laser operable to generate a first pump signal and a second pump laser operable to generate a second pump signal, the one or more combiners operable to combine the first pump signal and the second pump signal into couple a first optical signal, the first pump signal comprising at least a first wavelength and the second pump signal comprising at least a second wavelength, wherein the first wavelength of the first pump signal is substantially different than the second wavelength of the second pump signal; and ~~generated by the first pump laser and a second optical signal generated by the second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and~~

~~a Raman-wavelength shifter coupled to the one or more combiners, gain fiber, the wavelength shifter comprising a first waveguide structure and a second waveguide structure, the Raman wavelength shifter operable to receive the first optical signal and to wavelength shift at least a portion of the first optical signal based at least in part on a Raman effect, wherein the wavelength shifter operates to wavelength shift at least the first wavelength to an intermediate optical wavelength in the first waveguide structure and to wavelength shift the intermediate optical wavelength to a longer optical wavelength in the second waveguide structure, at least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in the second waveguide structure;~~

~~wherein at least a portion of the intermediate optical wavelength is greater than the first wavelength of the first optical signal and wherein at least a portion of the longer optical signal wavelength is greater than the intermediate optical wavelength; and~~

~~wherein the first waveguide structure is substantially different than the second waveguide structure.~~

2. (Previously Presented) The infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

3. (Currently Amended) The infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber-laser.

4. (Canceled)

5. (Currently Amended) The infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber-laser.

6. (Previously Presented) The infrared light source of Claim 1, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

7. (Currently Amended) The infrared light source of Claim 6, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second ~~optical~~ pump signal.

8. (Previously Presented) The infrared light source of Claim 7, wherein the multiplexer is selected from the group consisting of a wavelength division multiplexer, a polarization multiplexer, and a power combiner.

9. (Currently Amended) The infrared light source of Claim 1, wherein the second wavelength of the second pump signal is ~~optical signal comprises a selected wavelength~~ selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm, and 1510 nm.

10. (Currently Amended) The infrared light source of Claim 1, wherein the longer optical ~~signal~~ wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

11. (Currently Amended) The infrared light source of Claim 1, wherein the longer optical ~~signal~~ wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

12. (Currently Amended) The infrared light source of Claim 1, wherein a variation of the first wavelength of the first pump ~~optical~~ signal causes a variation in ~~wavelength~~ of the longer optical wavelength signal.

13. (Previously Presented) The infrared light source of Claim 1, wherein the one or more combiners are selected from the group consisting of a wavelength division multiplexer and a power coupler.

14. (Currently Amended) The infrared light source of Claim 1, wherein the first waveguide structure ~~gain-fiber~~ is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

15. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the first waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

16. (Currently Amended) The infrared light source of Claim 1, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least a portion of the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

17. (Previously Presented) The infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) The infrared light source of ~~Claim 18~~ Claim 1, wherein at least a portion of the second waveguide structure comprises an optical fiber, wherein the optical fiber is selected from the group consisting of a mid-infrared optical fiber, a chalcogenide fiber and a ZBLAN fiber.

21. (Currently Amended) The infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is an optical waveguide comprising a material selected from the group consisting of ZBLAN, sulfide, selenide, and telluride, a ZBLAN waveguide, a sulfide waveguide, a selenide waveguide, and a telluride waveguide.

22. (Canceled)

23. (Currently Amended) The infrared light source of Claim 1, wherein the longer optical ~~signal~~ wavelength comprises a wavelength of approximately 1.7 microns or more.

24. (Currently Amended) The infrared light source of Claim 1, wherein the longer optical ~~signal~~ wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

25. (Currently Amended) The infrared light source of Claim 1, wherein the longer optical ~~signal~~ wavelength comprises a wavelength in the range of five (5) microns to seven (7) microns.

26. (Currently Amended) The infrared light source of Claim 1, further comprising a wavelength separator coupled to the ~~Raman~~ wavelength shifter and capable of transmitting at least a portion of a selected wavelength from the ~~Raman~~ wavelength shifter.

27. (Previously Presented) The infrared light source of Claim 26, wherein the wavelength separator is selected from the group consisting of a demultiplexer, one or more partially transmissive gratings, one or more partially transmitting mirrors, one or more Fabry Perot filters and one or more dielectric gratings.

28. (Currently Amended) The infrared light source of Claim 1, further comprising at least a third waveguide structure coupled to the ~~Raman~~ wavelength shifter, wherein ~~the third waveguide structure comprises a coupling loss between the third waveguide structure and the wavelength shifter comprises~~ of no more than five (5) decibels.

29. (Currently Amended) A method of shifting an optical ~~signal~~ wavelength to a longer optical ~~signal~~ wavelength, comprising:

~~combining coupling~~ a first ~~optical pump~~ signal generated by a first pump laser and a second ~~optical pump~~ signal generated by a second pump laser ~~into a first optical signal, the first pump signal comprising at least a first wavelength and the second pump signal comprising at least a second wavelength, wherein the first wavelength of the first pump signal is substantially different than the second wavelength of the second pump signal; to a gain fiber, the gain fiber comprising a first waveguide structure; and~~

~~receiving the first optical signal at a wavelength shifter, the wavelength shifter comprising a first waveguide structure and a second waveguide structure, wherein the first waveguide structure is substantially different than the second waveguide structure;~~

~~shifting at least the first wavelength one wavelength of the first optical signal to an intermediate optical wavelength using an the first intermediate waveguide structure based at least in part on a Raman effect; coupled to the gain fiber;~~

~~shifting the intermediate optical wavelength to a longer optical signal wavelength using the second a second waveguide structure coupled to the intermediate waveguide structure; and~~

~~wherein at least a portion of the intermediate optical wavelength is greater than the first wavelength one wavelength of the first optical signal and wherein at least a portion of the longer optical signal wavelength is greater than the intermediate optical wavelength. wavelength;~~

30. (Original) The method of Claim 29, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

31. (Currently Amended) The method of Claim 30, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second ~~optical pump~~ signal.

32. (Currently Amended) The method of Claim 29, wherein the second wavelength of the second pump signal is optical signal ~~comprises a selected wavelength~~ selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Currently Amended) The method of Claim 29, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least a portion of the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

37. (Currently Amended) The method of Claim 29, wherein the longer optical ~~signal~~ wavelength comprises a wavelength of approximately 1.7 microns or more.

38. (Currently Amended) The method of Claim 29, wherein the longer optical ~~signal~~ wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

39. (Currently Amended) The method of Claim 29, further comprising transmitting at least a portion of a selected wavelength from the ~~Raman~~ wavelength shifter into a third waveguide structure.

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (Canceled)

47. (Canceled)

48. (Canceled)

49. (Canceled)

50. (Canceled)

51. (Canceled)

52. (New) The method of Claim 29, wherein the first waveguide structure is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

53. (New) The method of Claim 29, wherein the second waveguide structure is selected from the group consisting of a chalcogenide fiber and a ZBLAN fiber.

54. (New) The method of Claim 29, wherein at least a portion of the second waveguide structure is an optical waveguide comprising a material selected from the group consisting of ZBLAN, sulfide, selenide, and telluride.

55. (New) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a diagnostic procedure to detect tissue abnormalities.

56. (New) The infrared light source of Claim 1, wherein the longer optical wavelength is further coupled to a medical device adapted for insertion into a patient's body through an orifice in the body.

57. (New) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use to ablate tissue with reduced collateral damage.

58. (New) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a differential spectroscopic measurement based at least in part on a comparison of measurements taken from different portions of a sample.

59. (New) The infrared light source of Claim 1, wherein the longer optical wavelength is adapted for use in a measurement based at least in part on a comparison of a plurality of wavelengths transmitted through a sample.

60. (New) The method of Claim 29, wherein the longer optical wavelength is adapted for use in a diagnostic procedure to detect tissue abnormalities.

61. (New) The method of Claim 29, wherein the longer optical wavelength is further coupled to a medical device adapted for insertion into a patient's body through an orifice in the body.

62. (New) The method of Claim 29, wherein the longer optical wavelength is adapted for use to ablate tissue with reduced collateral damage.

63. (New) The method of Claim 29 wherein the longer optical wavelength is adapted for use in a differential spectroscopic measurement based at least in part on a comparison of measurements taken from different portions of a sample.

64. (New) The method of Claim 29, wherein the longer optical wavelength is adapted for use in a measurement based at least in part on a comparison of a plurality of wavelengths transmitted through a sample.

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed August 28, 2007. To clarify various aspects of inventive subject matter, Applicant amends Claims 1, 3, 5, 7, 9-12, 14, 16, 20-21, 23-26, 28-29, 31-32, and 36-39. Applicant also introduces new Claims 52-64 and cancels Claims 4, 18-19, 22, 33-35, and 46-51 without prejudice or disclaimer. To advance prosecution of this application, Applicant has responded to each notation by the Examiner. Applicant submits that all of the pending claims are in a condition of allowance. Applicant respectfully requests reconsideration, further examination, and favorable action in this case.

Claim Rejection 35 U.S.C. § 112

The Examiner rejects Claims 1-39 and 46-51 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant has canceled Claims 4, 18-19, 22, 33-35, and 46-51, and has amended Claims 1, 3, 5, 7, 9-12, 14, 16, 20-21, 23-26, 28-29, 31-32, and 36-39. Applicant believes these amendments do not narrow the scope of the claims, but address the Examiner's rejections under §112. Applicant respectfully requests reconsideration and favorable action in this case.

No Waiver

All of Applicant's arguments and amendments are without prejudice or disclaimer. By not responding to additional statements made by the Examiner, Applicant does not acquiesce to the Examiner's additional statements.

CONCLUSION

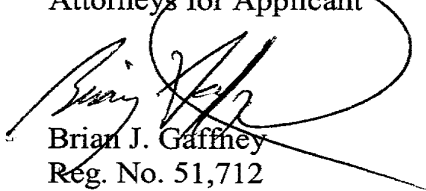
Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests reconsideration and full allowance of all pending Claims.

Although Applicant believes no fee is due, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

If the Examiner feels that a conference would advance prosecution of this Application in any manner, Brian J. Gaffney stands willing to conduct such a telephone interview at the convenience of the Examiner. Mr. Gaffney may be reached at 214-953-6682.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant


Brian J. Gaffney
Reg. No. 51,712

Date: Nov. 8, 2007

Customer No.

05073

Electronic Acknowledgement Receipt

EFS ID:	2442271
Application Number:	10812608
International Application Number:	
Confirmation Number:	3187
Title of Invention:	INFRA-RED LIGHT SOURCE INCLUDING A RAMAN SHIFTER
First Named Inventor/Applicant Name:	Mohammed N. Islam
Customer Number:	5073
Filer:	Brian J Gaffney/Elizabeth Turlo
Filer Authorized By:	Brian J Gaffney
Attorney Docket Number:	074036.0133
Receipt Date:	08-NOV-2007
Filing Date:	30-MAR-2004
Time Stamp:	14:21:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		0740360133roa.pdf	426739 dc65427f8eb16b66962dd54c1b442d49114d74bf	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment - After Non-Final Rejection	1	1
	Claims	2	11
	Applicant Arguments/Remarks Made in an Amendment	12	13

Warnings:

Information:

Total Files Size (in bytes):	426739
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 10/812,608		Filing Date 03/30/2004		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR			OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$	=		X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=		X \$	=			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		SMALL ENTITY OR			OTHER THAN SMALL ENTITY		
AMENDMENT	11/08/2007	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 45	Minus	** 45	=	0		X \$	=	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	=	0		X \$	=	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE	0		TOTAL ADD'L FEE		
(Column 1)			(Column 2)		SMALL ENTITY OR			OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=			X \$	=	
	Independent (37 CFR 1.16(h))	*	Minus	***	=			X \$	=	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE			TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
Veronica Augburn-Seaforth

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187
5073	7590	08/28/2007		
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			EXAMINER HELLNER, MARK	
			ART UNIT 3663	PAPER NUMBER
			NOTIFICATION DATE 08/28/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mike.furr@bakerbotts.com
ptomail1@bakerbotts.com

Office Action Summary	Application No. 10/812,608	Applicant(s) ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 and 46-51 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 and 46-51 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) ☐ Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-39 and 46-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Figure 9C of the present application shows a combiner (944) coupled to a first pump source (942a) and a second pump source (942b). The output of the device is sent to a Raman Oscillator. The structure of the Raman Oscillator is disclosed by figures 8A to 8D.

As a result, the present application fails to provide support for the claimed gain fiber comprising a first waveguide structure.

Figures 8A to 8D disclose what is identified as either a Raman Oscillator or Raman Wavelength shifter.

It is not clear in these figures as to what defines the intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of a first optical signal to an intermediate wavelength.

Art Unit: 3663

It is also noted that there is no sole figure in the specification that shows the complete structure supporting either independent claim 1 or 29.

An exact description of the combination of figures that supports the claimed subject matter along with a clear identification of structure that supports each individual claimed element is proper in order to make a valid comparison with the prior art.

Applicant's arguments with respect to claims 1-39 and 46-51 have been considered but are moot in view of the new ground(s) of rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The reference cited expands on the concepts of previously recited art.

Any inquiry concerning this communication should be directed to Mark Hellner at telephone number 571 272 6981.

Mark Hellner

Primary Examiner

AU 3663

A handwritten signature in black ink that reads "Mark Hellner". The signature is written in a cursive, flowing style.

PTO-1449		Application No. 10/812,608		Applicant(s) Mohammed N. Islam			
Information Disclosure Citation in an Application		Docket Number 074036.0133		Group Art Unit 3663	Filing Date March 30, 2004		
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
9/10/01	A	4,958,910	09/25/1990	Taylor et al.	350	321	03/31/1988
	B	5,084,880	01/28/1992	Esterowitz et al.	372	6	07/02/1990
	C	5,180,378	01/19/1993	Kung et al.	606	10	11/14/1990
	D	5,191,628	03/02/1993	Byron	385	27	10/29/1991
	E	5,267,256	11/30/1993	Saruwatari et al.	372	94	09/14/1992
	F	5,695,493	12/09/1997	Nakajima et al.	606	13	06/01/1995
	G	5,696,778	12/09/1997	McPherson	372	4	10/25/1995
	H	6,200,309	03/13/2001	Rice et al.	606	10	06/30/1998
	I	6,246,707 B1	06/12/2001	Yin et al.	372	25	11/18/1998
	J	6,337,462 B1	01/08/2002	Smart	219	121.68	11/16/1999
	K	6,458,120 B1	10/01/2002	Shen et al.	606	10	10/01/2002
	L	6,567,431 B2	05/20/2003	Tabirian et al.	372	4	05/22/2001
	M	6,625,180 B2	09/23/2003	Bufetov et al.	372	3	02/02/2001
	N	6,631,025 B2	10/07/2003	Islam et al.	359	334	01/12/2001
	O	6,760,148 B2	07/06/2004	Islam	359	334	01/19/2001
	P	2004/0174914 A1	09/09/2004	Fukatsu	372	20	07/31/2002
	Q	6,885,498 B2	04/26/2005	Islam	395	334	12/10/2001
	R	6,943,936 B2	09/13/2005	Islam et al.	359	108	11/25/2003
9/10/01	S	7,027,467 B2	04/11/2006	Baev et al.	372	6	12/27/2001
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
	T						YES NO
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
9/10/01	U	Islam, "System and Method for Voice Control of Medical devices," USSN 10/652,276, 55 pages					Date Filed: August 29, 2003
9/10/01	V	Islam, "System and Method for Voice Control of Medical devices," USSN 10/757,341, 68 pages					Date Filed: January 13, 2004
EXAMINER Mark Hellner				DATE CONSIDERED 08/18/2007			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							

U.S. Patent and Trademark Office

DAL01:950161

Notice of References Cited	Application/Control No. 10/812,608	Applicant(s)/Patent Under Reexamination ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,167,300	01-2007	Fermann et al.	359/337.5
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date	
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Search Notes

Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under
Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

SEARCHED

Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
East Text	08/18/07	gm70

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1003	raman and wavelength and (shifter or shifting)	USPAT	OR	OFF	2007/08/18 15:49
L2	1558	intermediate with waveguide	USPAT	OR	OFF	2007/08/18 15:42
L3	17	1 and 2	USPAT	OR	OFF	2007/08/18 15:43
L4	35	raman with wavelength with shifter	USPAT	OR	OFF	2007/08/18 15:49
L5	35	raman with frequency with shifter	USPAT	OR	OFF	2007/08/18 15:49
L6	58	4 or 5	USPAT	OR	OFF	2007/08/18 15:58
L7	59	"raman shifter"	USPAT	OR	OFF	2007/08/18 15:58

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Filing Date: March 30, 2004
Art Unit: 3663
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical
Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Response pursuant to 37 C.F.R. § 1.111

In response to the first Office Action mailed March 1, 2007, Applicant respectfully requests the Examiner to reconsider the rejection of the claims in view of the following amendments and remarks. Please amend the Application as follows:

IN THE TITLE

On Page 1, please replace the Title as follows:

Infra-Red Light Source including a Raman Shifter

On Page 57, please replace the Title as follows:

Infra-Red Light Source including a Raman Shifter

IN THE SPECIFICATION

On Page 57, lines 1-11, please replace all of the Abstract section as follows:

An infrared light source includes one or more combiners that are coupled to at least a first pump laser and a second pump laser. The combiners are operable to couple a first optical signal generated by the first pump laser and a second optical signal generated by the second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure. The light source also includes a Raman wavelength shifter that is coupled to the gain fiber. The Raman wavelength shifter being operable to wavelength shift based at least in part on a Raman effect. At least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure that is coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in the second waveguide structure.

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) ~~A mid~~ An infrared light source, comprising:
a ~~combiner~~ one or more combiners coupled to at least a first pump laser and a second pump laser, the combiners ~~combiner~~ operable to couple a first optical signal generated by the first pump laser and a second optical signal generated by the second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and
a Raman wavelength shifter coupled to the gain fiber, the Raman wavelength shifter operable to wavelength shift based at least in part on a Raman effect, at least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in the second waveguide structure;
wherein at least a portion of the intermediate wavelength is greater than the one wavelength of the first optical signal and wherein at least a portion of the longer signal wavelength is greater than the intermediate wavelength.
2. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.
3. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.
4. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

5. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.

6. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

7. (Currently Amended) The ~~mid~~-infrared light source of Claim 6, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second optical signal.

8. (Currently Amended) The ~~mid~~-infrared light source of Claim 7, wherein the multiplexer is selected from the group consisting of a wavelength division multiplexer, a polarization multiplexer, and a power combiner.

9. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the second optical signal comprises a selected wavelength selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm, and 1510 nm.

10. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

11. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

12. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

13. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the one or more combiners are ~~combiner~~ is selected from the group consisting of a wavelength division multiplexer and a power coupler.

14. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the gain fiber is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

15. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein at least a portion of the first waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

16. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

17. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

18. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure comprises an optical fiber.

19. (Currently Amended) The ~~mid~~-infrared light source of Claim 18, wherein the optical fiber comprises a mid-infrared optical fiber.

20. (Currently Amended) The ~~mid~~-infrared light source of Claim 18, wherein the optical fiber is selected from the group consisting of a chalcogenide fiber and a ZBLAN fiber.

21. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of a ZBLAN waveguide, a sulfide waveguide, a selenide waveguide, and a telluride waveguide.

22. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure comprises a single mode optical fiber.

23. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength of approximately 1.7 microns or more.

24. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

25. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of five (5) microns to seven (7) microns.

26. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, further comprising a wavelength separator coupled to the Raman wavelength shifter and capable of transmitting at least a portion of a selected wavelength from the Raman wavelength shifter.

27. (Currently Amended) The ~~mid~~-infrared light source of Claim 26, wherein the wavelength separator is selected from the group consisting of a demultiplexer, one or more partially transmissive gratings, one or more partially transmitting mirrors, one or more Fabry Perot filters and one or more dielectric gratings.

28. (Currently Amended) The ~~mid~~-infrared light source of Claim 1, further comprising at least a third waveguide structure coupled to the Raman wavelength shifter, wherein the third waveguide structure comprises a coupling loss of no more than five (5) decibels.

29. (Currently Amended) A method of shifting an optical signal wavelength to a longer optical signal wavelength, comprising:

coupling a first optical signal generated by a first pump laser and a second optical signal generated by a second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and

shifting at least one wavelength of the first optical signal to an intermediate wavelength using an intermediate waveguide structure coupled to the gain fiber;

shifting the intermediate wavelength to a longer signal wavelength using a second waveguide structure coupled to the ~~gain fiber~~ intermediate waveguide structure; and

wherein at least a portion of the intermediate wavelength is greater than the one wavelength of the first optical signal and wherein at least a portion of the longer signal wavelength is greater than the intermediate wavelength.

30. (Original) The method of Claim 29, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

31. (Original) The method of Claim 30, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second optical signal.

32. (Original) The method of Claim 29, wherein the second optical signal comprises a selected wavelength selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

33. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

34. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

35. (Original) The method of Claim 29, wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

36. (Original) The method of Claim 29, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

37. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength of approximately 1.7 microns or more.

38. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

39. (Original) The method of Claim 29, further comprising transmitting at least a portion of a selected wavelength from the Raman wavelength shifter into a third waveguide structure.

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (New) The infrared light source of Claim 1, wherein the intermediate waveguide structure comprises at least in part fused silica fiber.

47. (New) The infrared light source of Claim 1, wherein intermediate waveguide structure is substantially different than the second waveguide structure.

48. (New) The infrared light source of Claim 1, wherein the first pump laser is at a different wavelength than the second pump laser.

49. (New) The method of Claim 29, wherein the intermediate waveguide structure comprises at least in part fused silica fiber.

50. (New) The method of Claim 29, wherein intermediate waveguide structure is substantially different than the second waveguide structure.

51. (New) The method of Claim 29, wherein the first optical signal is at a different wavelength than the second optical signal.

REMARKS

This Application has been carefully reviewed in light of the first Office Action mailed March 1, 2007. To clarify various aspects of inventive subject matter and in some cases to remove unnecessary limitations, Applicant amends Claims 1-29. Applicant also introduces new Claims 46-51 and cancels Claims 40-45 without prejudice or disclaimer. To advance prosecution of this Application, Applicant has responded to each notation by the Examiner. Applicant submits that all of the original claims are allowable over the cited references. Applicant respectfully requests reconsideration and favorable action in this case.

Objection to Drawings

The Examiner objects to the drawings because they are not formal drawings. Applicant is filing concurrently herewith seven sheets of formal drawings. They replace the informal drawings originally filed.

Objection to Specification

The Examiner objects to the abstract and title because they do not adequately describe the invention claimed. Applicant has amended the abstract and title. Applicant respectfully requests reconsideration and favorable action in this case.

Claim Rejection 35 U.S.C. § 103

The Examiner rejects Claims 1-39 under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6,885,683 issued to Fermann et al. ("*Fermann*") in view of U.S. Patent 6,407,853 issued to Samson et al. ("*Samson*"). Applicant respectfully traverses these claim rejections for the reasons discussed below.

Applicant provides a reminder that to defeat a patent under 35 U.S.C. § 103, "the prior art reference must teach, disclose, or suggest all the claim limitations." *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); M.P.E.P. § 706.02(j). Applicant respectfully submit that *Fermann*, *Samson*, and/or knowledge supposedly generally available to those of ordinary skill in the art at the time of the invention, taken alone or in combination, fail to teach or suggest, either expressly or inherently, a number of elements of independent Claims 1 and 29.

A. The Proposed *Fermann-Samson* Combination Fails to Disclose, Teach, or Suggest Each and Every Limitation Recited in Claims 1 and 29

Applicant submits that amended Claim 1 is patentable over *Fermann* in view of *Samson*. Among other features, amended Claim 1 recites, in part, that “a Raman wavelength shifter coupled to the gain fiber, the Raman wavelength shifter operable to wavelength shift based at least in part on a Raman effect, at least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in the second waveguide structure.” Amended Claim 1 also recites, in part, that “at least a portion of the intermediate wavelength is greater than the one wavelength of the first optical signal and wherein at least a portion of the longer signal wavelength is greater than the intermediate wavelength.”

Fermann fails to teach or suggest a number of elements of amended Claim 1. For example, nowhere does *Fermann* contemplate a Raman wavelength shifter coupled to the gain fiber, the Raman wavelength shifter operable to wavelength shift based at least in part on a Raman effect, at least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in the second waveguide structure. Moreover, *Fermann* fails to teach or suggest that at least a portion of the intermediate wavelength is greater than the one wavelength of the first optical signal and wherein at least a portion of the longer signal wavelength is greater than the intermediate wavelength. Consequently, *Fermann* fails to teach or suggest amended Claim 1.

The *Samson* reference fails to atone for the deficiencies of *Fermann*. For example, *Samson* fails to disclose, teach, or suggest that a Raman wavelength shifter coupled to the gain fiber, the Raman wavelength shifter operable to wavelength shift based at least in part on a Raman effect, at least a portion of the Raman wavelength shifter comprising an intermediate waveguide structure coupled to a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to an intermediate wavelength in the intermediate waveguide structure and then a longer signal wavelength in

the second waveguide structure. Moreover, *Samson* fails to teach or suggest that at least a portion of the intermediate wavelength is greater than the one wavelength of the first optical signal and wherein at least a portion of the longer signal wavelength is greater than the intermediate wavelength. Consequently, *Samson* fails to teach or suggest amended Claim 1.

For at least these reasons, Applicant submits that *Fermann* and/or *Samson*, taken alone or in combination, fail to teach or suggest amended Claim 1. Applicant respectfully requests withdrawal of the rejection and full allowance of independent Claim 1 and all claims depending therefrom.

Applicant submits that amended independent Claim 29 is patentable over *Fermann* in view of *Samson* for reasons analogous to those discussed above. Thus, Applicant respectfully requests withdrawal of the rejection and full allowance of amended Claim 29 and all claims depending therefrom.

B. The Proposed *Fermann-Samson* Combination is Improper

The rejection of Applicant's claims is also improper because the Examiner has not shown the required teaching, suggestion, or motivation in *Fermann*, *Samson*, or in the knowledge generally available to those of ordinary skill in the art at the time of the invention to combine or modify the *Fermann* or *Samson* references in the manner the Examiner proposes. The rejected claims are allowable for at least this additional reason.

1. The Obviousness Standard

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the time of the invention. Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed above, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention. It is clear based at least on the distinctions discussed above that the proposed *Fermann* and *Samson* combination does not, taken as a whole, suggest the claimed invention. Respectfully, it appears to Applicant that the Examiner has *merely pieced*

together disjointed portions of references, with the benefit of hindsight using Applicant's claims as a blueprint, in an attempt to reconstruct Applicant's claims.

The governing Federal Circuit case law makes this strict legal standard clear.¹ According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* ***Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so."*** *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432 (emphasis added). *See also In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (***holding a prima facie case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine***); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at" the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, ***"The tendency to resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However,***

¹ Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. § 2142 (emphasis added). The governing Federal Circuit cases are equally clear. “A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome *wherein that which only the invention taught is used against its teacher.*’” *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted; emphasis added). In *In re Kotzab*, the court noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. *See id.* *See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, *explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant’s invention:*

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted; emphasis added).

2. Argument

According to the Examiner, it would have been obvious to a person of skill in the art at the time the invention was made to combine the teachings of *Arthurs ‘167* or *Arthurs ‘681*, with one or more of *Fermann* and *Samson* references. The Examiner provides essentially no support in the *Fermann* and *Samson* references for these assertions. Applicant respectfully

submits that the Examiner's assertion that it would have been obvious to modify the teachings of *Fermann* with *Samson* to purportedly arrive at Applicant's invention is entirely insufficient to support a *prima facie* case of obviousness under 35 U.S.C. § 103(a) under the M.P.E.P. and the governing Federal Circuit case law. Consequently, the Examiner has not demonstrated the requisite teaching, suggestion, or motivation in either of the reference or in the knowledge that is supposedly generally available to one of ordinary skill in the art at the time of Applicant's invention to combine or modify these references in the manner the Examiner proposes.

It appears that the Examiner is merely proposing alleged advantages of modifying *Fermann* with *Samson* (advantages which Applicant does not admit could even be achieved by combining these references in the manner the Examiner proposes). While the Examiner has cited portions of *Fermann* and *Samson* the Examiner has not pointed to any portions of the cited references or to knowledge supposedly generally available to those of ordinary skill in the art at the time of the invention that would teach, suggest, or motivate one of ordinary skill in the art at the time of invention to modify the system disclosed in *Fermann* as suggested by the Examiner. Indeed, if it were sufficient for Examiners to merely point to a purported advantage and conclude that it would have been obvious to combine or modify that reference with other references simply based on that advantage (which, as should be evident from the case law discussed above, it certainly is not), then virtually any two references would be combinable just based on the fact the one reference states an advantage of its system. Of course, as the Federal Circuit has made clear and as discussed above, that is not the law.

It certainly would not have been obvious to one of ordinary skill in the art at the time of invention *to even attempt* to, let alone *to actually*, modify or combine the system disclosed in *Fermann* with *Samson* in the manner proposed by the Examiner. Applicant respectfully submits that the Examiner's attempt to modify or combine *Fermann* with *Samson* appears to constitute the type of impermissible hindsight reconstruction of Applicant's claims, using Applicant's claims as a blueprint, that is specifically prohibited by the M.P.E.P. and governing Federal Circuit cases.

Accordingly, since the prior art fails to provide the required teaching, suggestion, or motivation to modify *Fermann* in the manner the Examiner proposes, Applicant respectfully submits that the Examiner's conclusions set forth in the Office Action do not meet the requirements set forth in the M.P.E.P. and the governing Federal Circuit case law for demonstrating a *prima facie* case of obviousness. Applicant respectfully submits that the rejection must therefore be withdrawn.

D. Conclusion

For at least these reasons, Applicant respectfully requests reconsideration and allowance of independent Claims 1 and 29, and claims depending therefrom.

No Waiver

All of Applicant's arguments and amendments are without prejudice or disclaimer. Additionally, Applicant has merely discussed example distinctions from the *Fermann* and *Samson* references. Other distinctions may exist, and Applicant reserves the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicant are sufficient to overcome the anticipation and obviousness rejections.

CONCLUSION

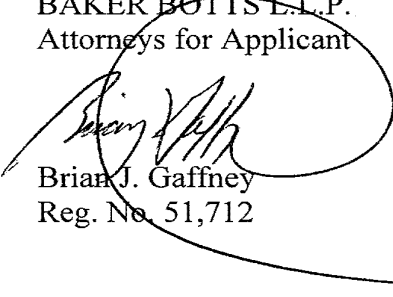
Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests reconsideration and full allowance of all pending Claims.

Although Applicant believes no fee is due, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

If the Examiner feels that a conference would advance prosecution of this Application in any manner, Brian J. Gaffney stands willing to conduct such a telephone interview at the convenience of the Examiner. Mr. Gaffney may be reached at 214-953-6682.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant


Brian J. Gaffney
Reg. No. 51,712

Date: June 1, 2007
Customer No.

05073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/810,608
Filed: March 30, 2004
Art Unit: 6336
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

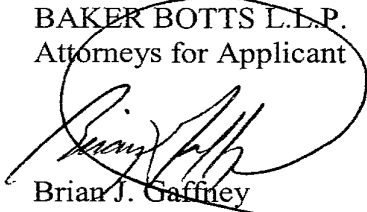
Transmittal of Formal Drawings

Transmitted herewith are 7 sheets of formal drawings to be substituted for the informal drawings initially filed in the above-identified application for patent.

Although Applicant believes no fee is due, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant



Brian J. Gaffney
Reg. No. 51,712

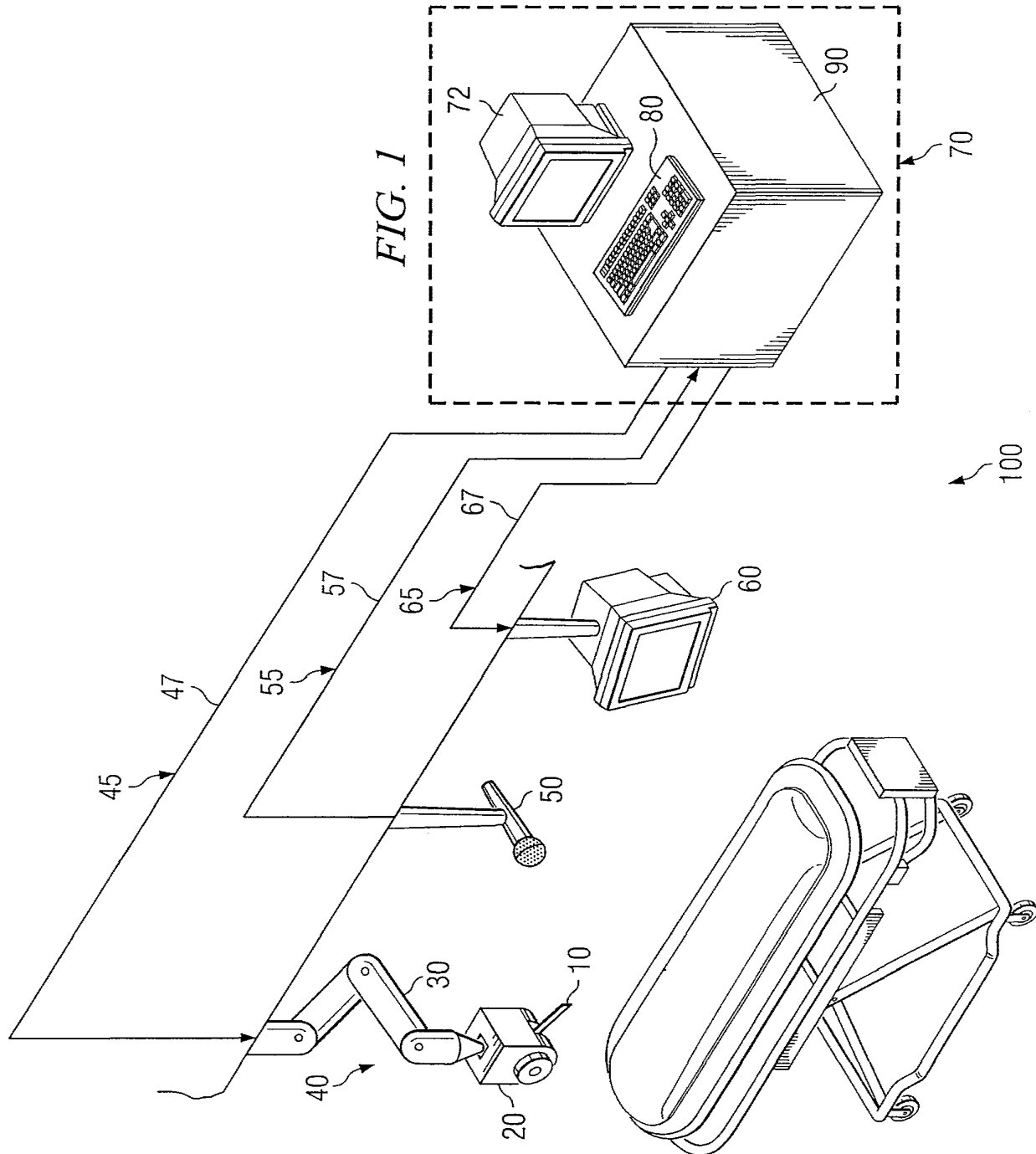
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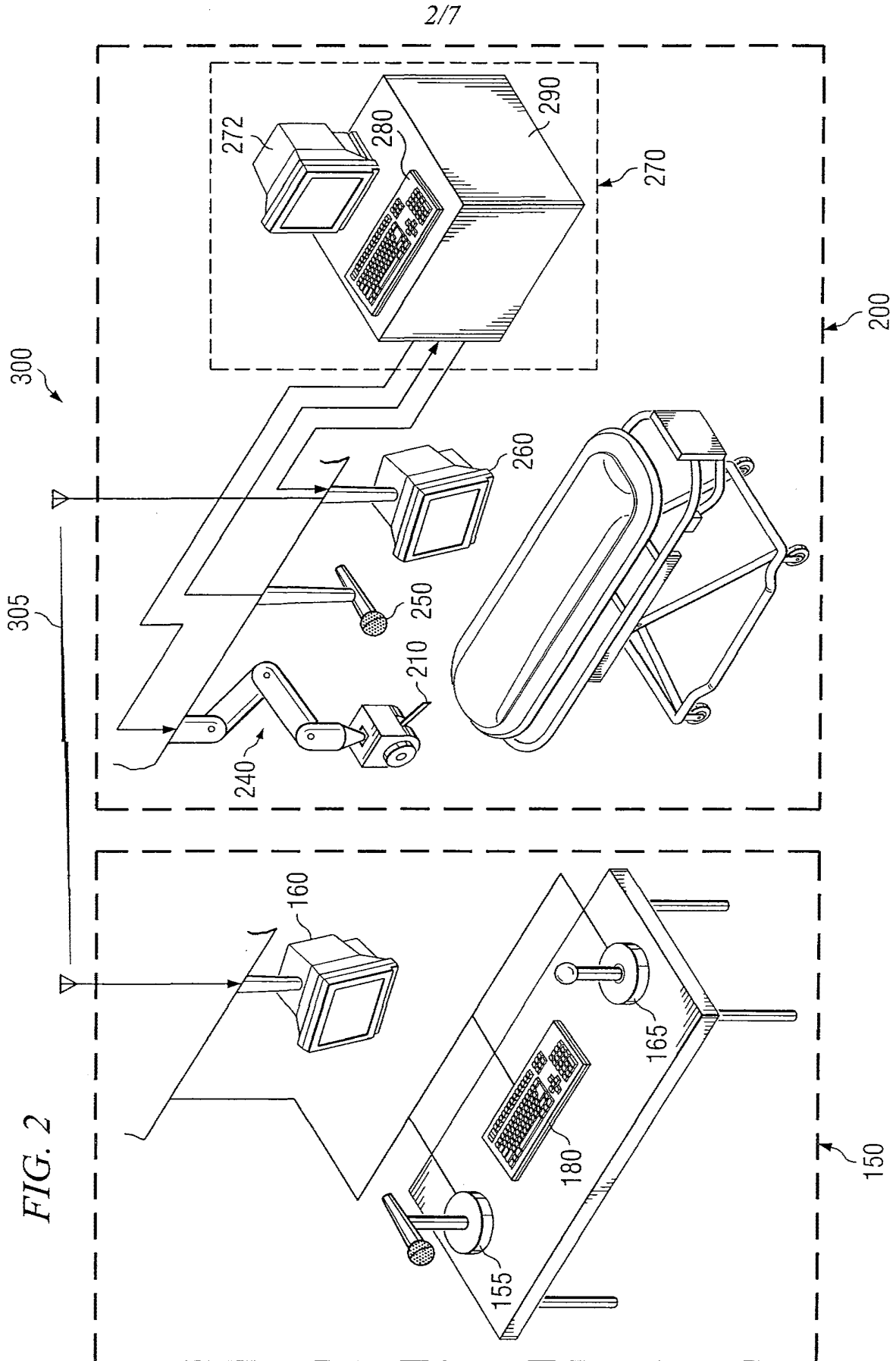
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Customer Number:

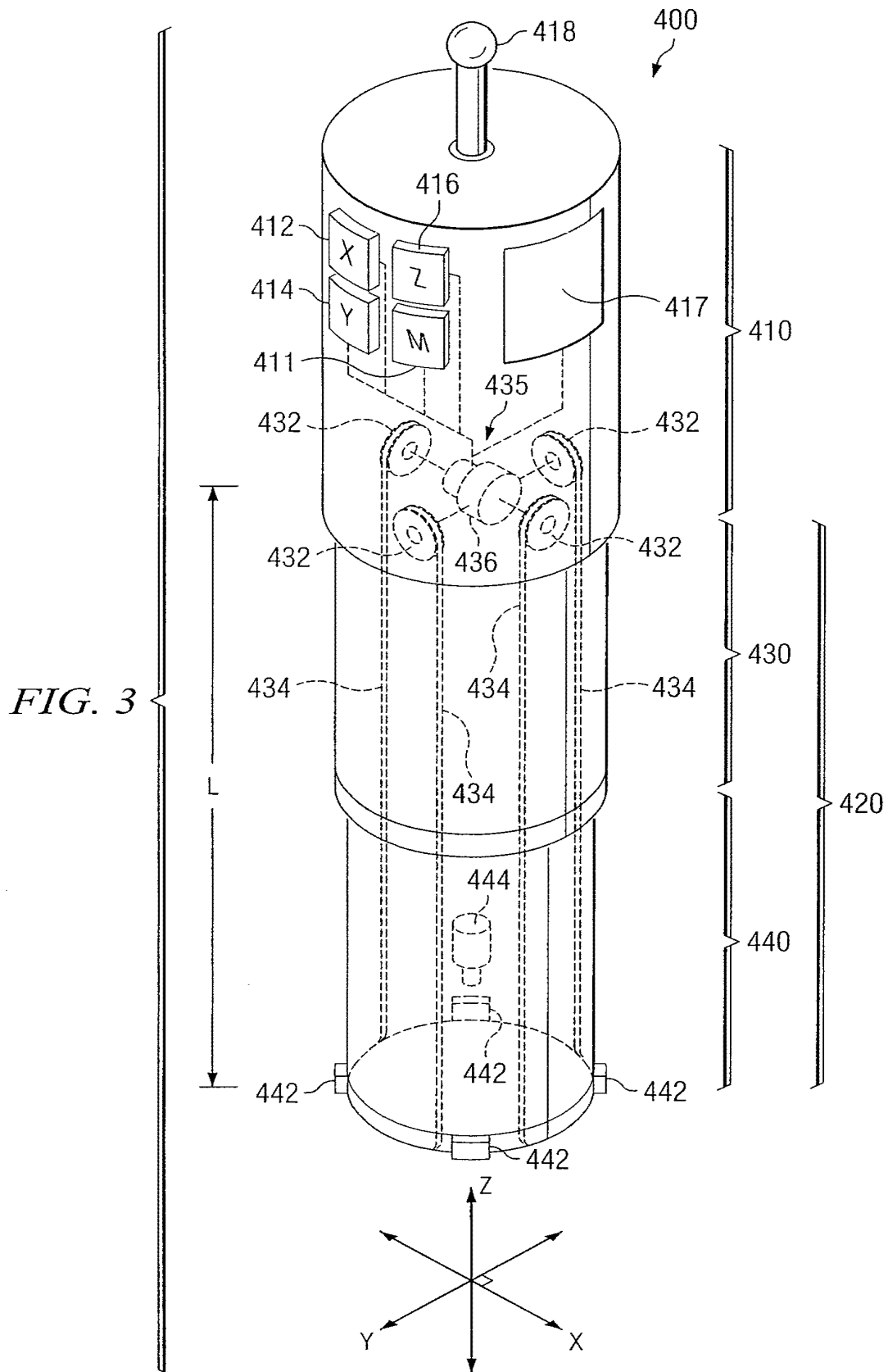
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3/7



4/7

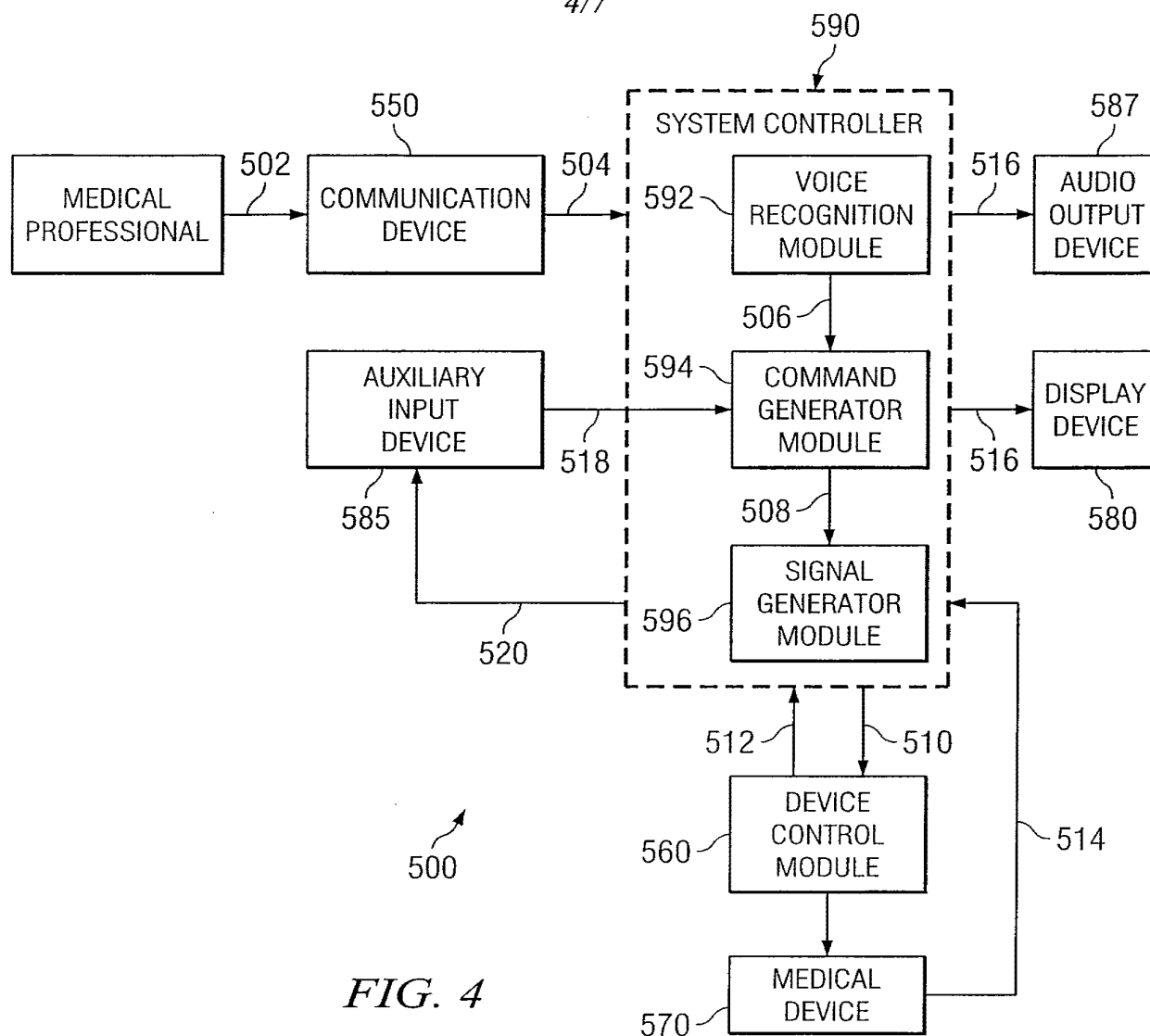


FIG. 4

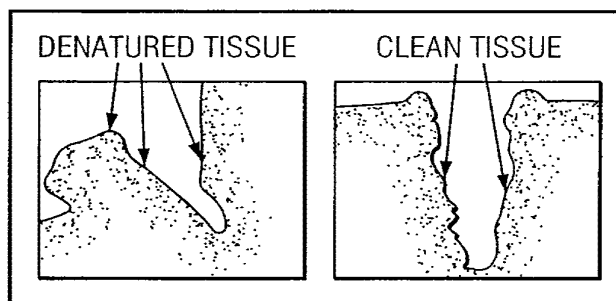


FIG. 6A

FIG. 5

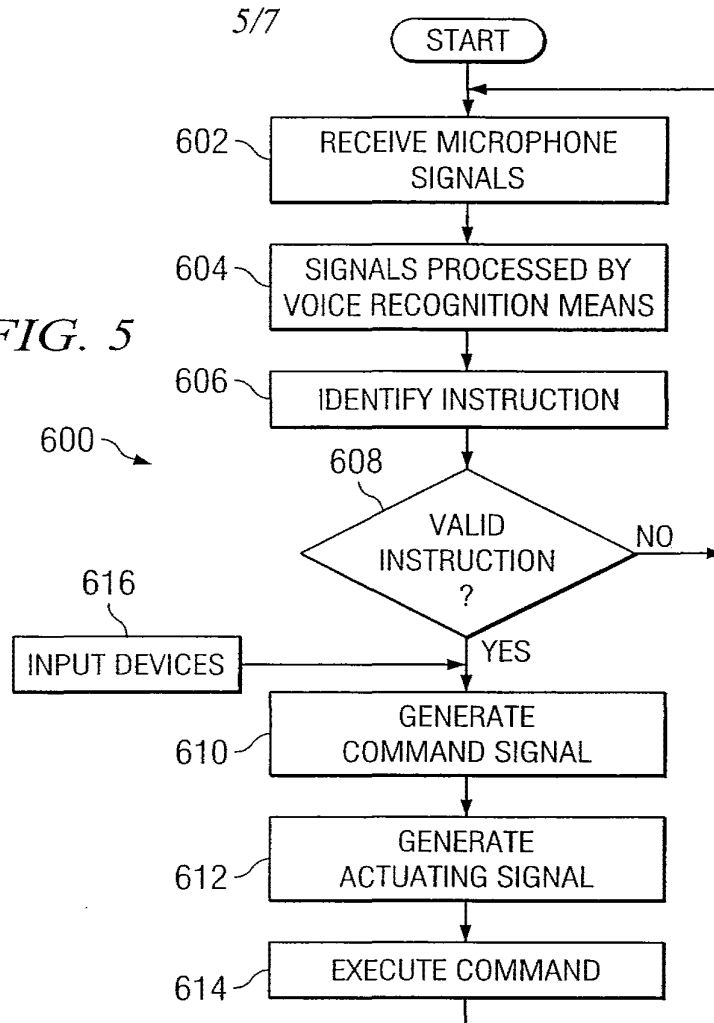
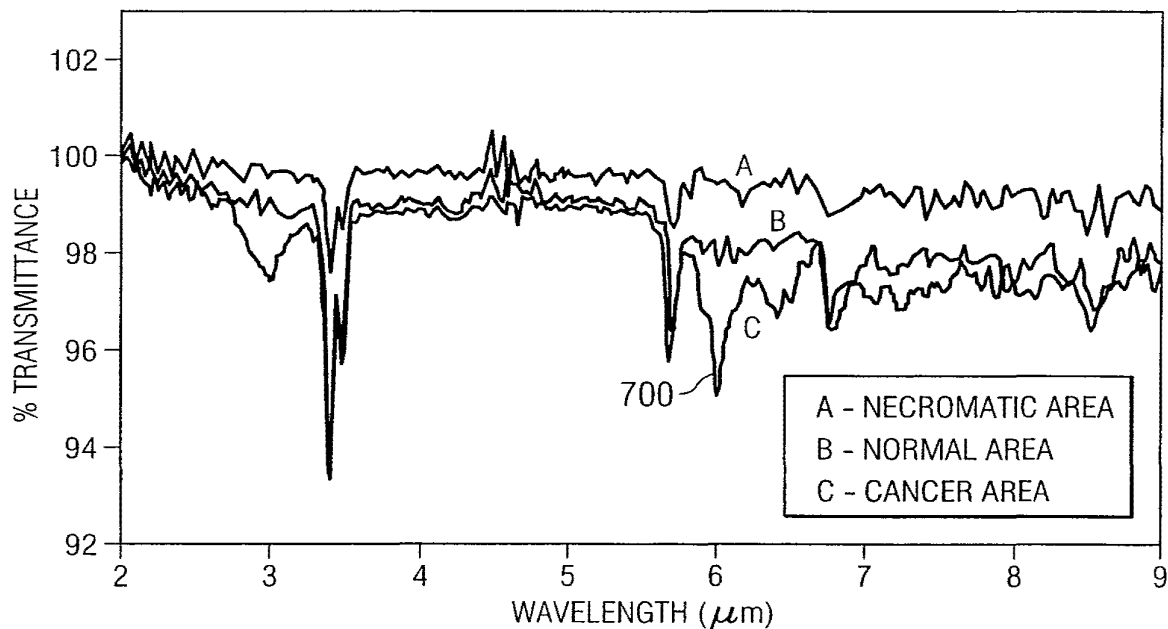
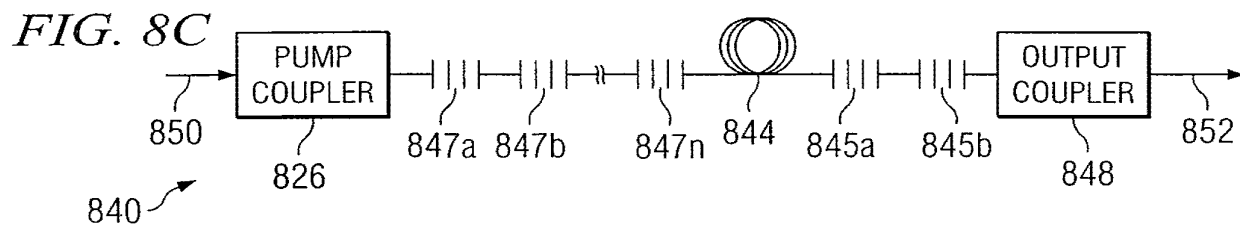
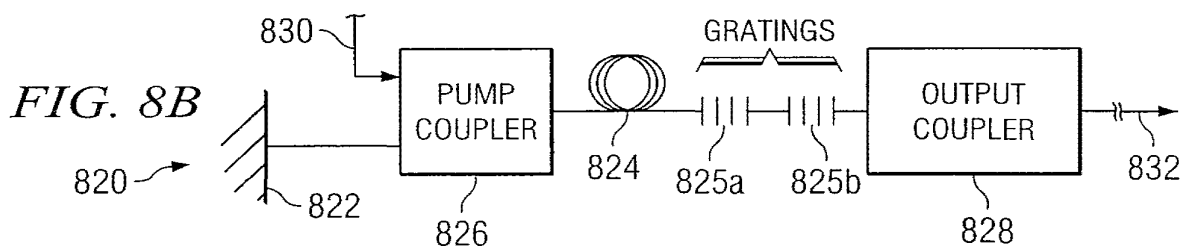
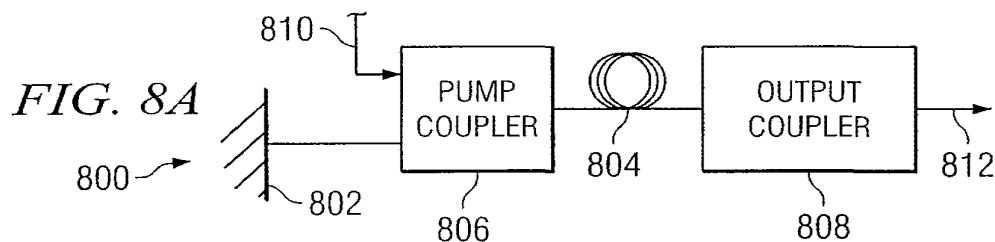
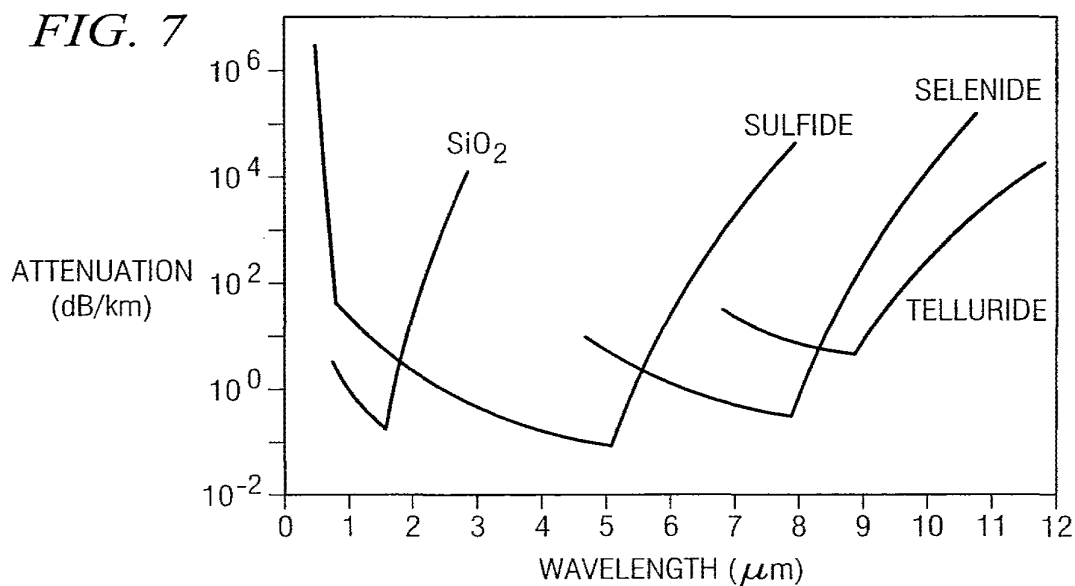


FIG. 6B



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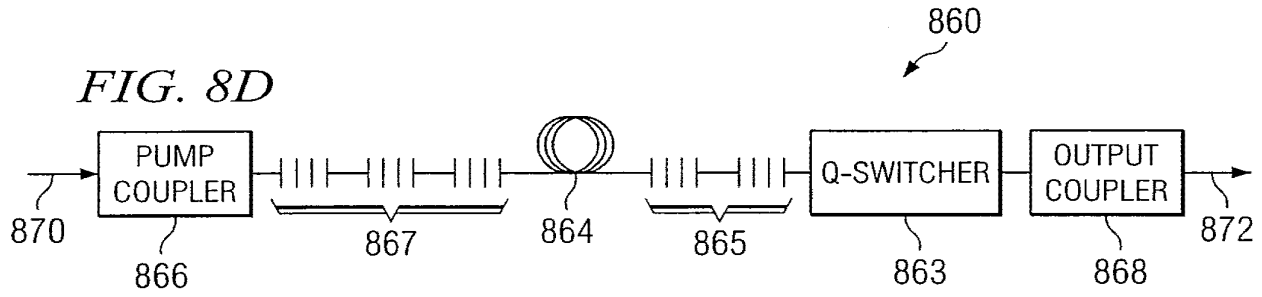


FIG. 9A

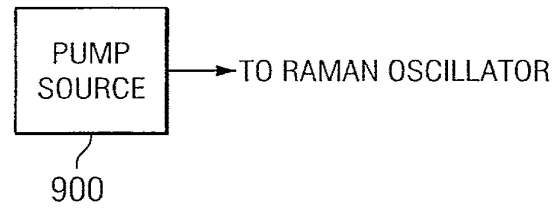
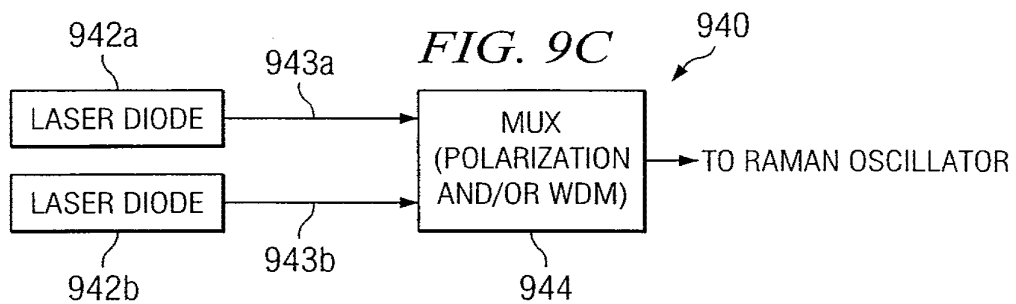
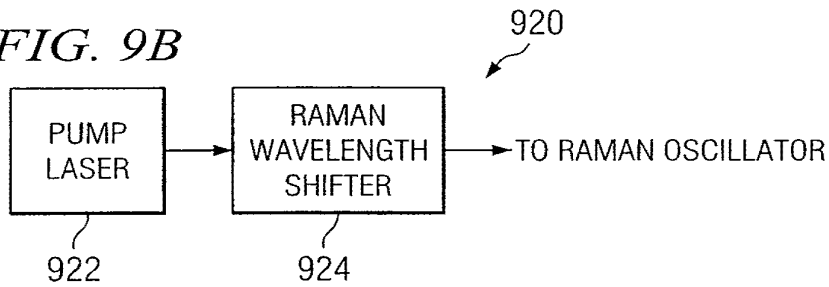


FIG. 9B



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Appln. Serial No.: 10/812,608
Date Filed: March 30, 2004
Art Unit: 6336
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

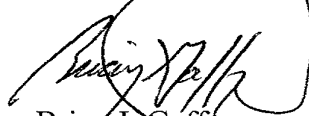
Information Disclosure Statement

Applicant respectfully requests, pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified patent application. No representation is made that a search has been made, that these references are material to the patentability of the present invention, or that these references qualify as prior art. The present Application was filed after June 30, 2003. Therefore, under the July 11, 2003, waiver of 37 C.F.R. § 1.98(a)(2)(i) by the U.S. Patent and Trademark Office, copies of U.S. Patents and U.S. Patent Application Publications listed in the attached PTO-1449 form are not enclosed.

Pursuant to 37 C.F.R. § 1.97(c)(2), this Information Disclosure Statement is being submitted after receipt of the first Office Action and is being filed before the mailing date of a notice of allowance under § 1.311.

The Commissioner is hereby authorized to charge the fee of \$180.00 to cover the cost of filing this Information Disclosure Statement to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. Although Applicant believes no other fee is due, the Commissioner is hereby authorized to charge any additional fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.



Brian J. Gaffney
Reg. No. 51,712
Attorneys for Applicants

Date: June 1, 2007
Correspondence Address:

Customer Number:

05073

PTO-1449 Information Disclosure Citation in an Application	Application No.	Applicant(s)	
	10/812,608	Mohammed N. Islam	
	Docket Number	Group Art Unit	Filing Date
	074036.0133	3663	March 30, 2004

U.S. PATENT DOCUMENTS

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	4,958,910	09/25/1990	Taylor et al.	350	321	03/31/1988
	B	5,084,880	01/28/1992	Esterowitz et al.	372	6	07/02/1990
	C	5,180,378	01/19/1993	Kung et al.	606	10	11/14/1990
	D	5,191,628	03/02/1993	Byron	385	27	10/29/1991
	E	5,267,256	11/30/1993	Saruwatari et al.	372	94	09/14/1992
	F	5,695,493	12/09/1997	Nakajima et al.	606	13	06/01/1995
	G	5,696,778	12/09/1997	McPherson	372	4	10/25/1995
	H	6,200,309	03/13/2001	Rice et al.	606	10	06/30/1998
	I	6,246,707 B1	06/12/2001	Yin et al.	372	25	11/18/1998
	J	6,337,462 B1	01/08/2002	Smart	219	121.68	11/16/1999
	K	6,458,120 B1	10/01/2002	Shen et al.	606	10	10/01/2002
	L	6,567,431 B2	05/20/2003	Tabirian et al.	372	4	05/22/2001
	M	6,625,180 B2	09/23/2003	Bufetov et al.	372	3	02/02/2001
	N	6,631,025 B2	10/07/2003	Islam et al.	359	334	01/12/2001
	O	6,760,148 B2	07/06/2004	Islam	359	334	01/19/2001
	P	2004/0174914 A1	09/09/2004	Fukatsu	372	20	07/31/2002
	Q	6,885,498 B2	04/26/2005	Islam	395	334	12/10/2001
	R	6,943,936 B2	09/13/2005	Islam et al.	359	108	11/25/2003
	S	7,027,467 B2	04/11/2006	Baev et al.	372	6	12/27/2001

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	T							

NON-PATENT DOCUMENTS

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	U	Islam, "System and Method for Voice Control of Medical devices," USSN 10/652,276, 55 pages	Date Filed: August 29, 2003
	V	Islam, "System and Method for Voice Control of Medical devices," USSN 10/757,341, 68 pages	Date Filed: January 13, 2004

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

U.S. Patent and Trademark Office

Electronic Patent Application Fee Transmittal

Application Number:	10812608			
Filing Date:	30-Mar-2004			
Title of Invention:	System and method for voice control of medical devices			
First Named Inventor/Applicant Name:	Mohammed N. Islam			
Filer:	Brian J Gaffney/Elizabeth Turlo			
Attorney Docket Number:	074036.0133			
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	1829243
Application Number:	10812608
International Application Number:	
Confirmation Number:	3187
Title of Invention:	System and method for voice control of medical devices
First Named Inventor/Applicant Name:	Mohammed N. Islam
Customer Number:	5073
Filer:	Brian J Gaffney/Elizabeth Turlo
Filer Authorized By:	Brian J Gaffney
Attorney Docket Number:	074036.0133
Receipt Date:	01-JUN-2007
Filing Date:	30-MAR-2004
Time Stamp:	10:38:00
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	\$ 180
RAM confirmation Number	4512
Deposit Account	020384
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1		0740360133roa.pdf	730083	yes	18
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment - After Non-Final Rejection		1	1	
	Specification		2	3	
	Claims		4	10	
	Applicant Arguments/Remarks Made in an Amendment		11	18	
Warnings:					
Information:					
2	Drawings	0740360133repldwgs.pdf	200662	no	8
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed	0740360133ids.pdf	107645	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	Fee Worksheet (PTO-06)	fee-info.pdf	8179	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1046569		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number

10812608

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	45	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	45 minus 20 =	25
INDEPENDENT CLAIMS	3 minus 3 =	0
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

12/11/06

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	45	Minus 45	0
Independent	3	Minus 3	0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

6/21/07

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	
Independent		Minus	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	
Independent		Minus	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
X5 9=	225	OR	X518=	
X43=	0	OR	X86=	
+145=	0	OR	+290=	
TOTAL	610	OR	TOTAL	

RATE	ADDI-TIONAL FEE	OR	RATE	ADDI-TIONAL FEE
X5 9=		OR	X518=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL		OR	TOTAL	

RATE	ADDI-TIONAL FEE	OR	RATE	ADDI-TIONAL FEE
X5 9=		OR	X518=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL		OR	TOTAL	

RATE	ADDI-TIONAL FEE	OR	RATE	ADDI-TIONAL FEE
X5 9=		OR	X518=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL		OR	TOTAL	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187

5073 7590 03/01/2007
BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

EXAMINER

HELLNER, MARK

ART UNIT	PAPER NUMBER
----------	--------------

3663

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/01/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/01/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

glenda.orrantia@hotmail.com
mike.furr@bakerbotts.com
ptomail1@bakerbotts.com

Office Action Summary

Application No.

10/812,608

Applicant(s)

ISLAM, MOHAMMED N.

Examiner

Mark Hellner

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) ☐ Other: ____ |

DETAILED ACTION

Drawings

The drawings are objected to because they are informal hand sketches. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it does not describe the embodiment to which the present claims are directed. Correction is required. See MPEP § 608.01(b).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Mid Infra-Red Light Source Including A Raman Shifter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fermann et al (6,885,683) in view of Samson et al (6,407,853).

Fermann et al disclose a light source comprising: a gain fiber (21) comprising a first waveguide structure; and a Raman wavelength shifter (22) coupled to the gain fiber, at least a portion of the wavelength shifter being a second fluoride base waveguide capable of shifting the optical signal derived from the gain fiber.

The difference between claim 1 and Fermann et al is the explicit recitation of a first pump laser and second pump laser coupled to a combiner in order to input light into the gain fiber.

With respect to this difference, it would have been logical for the skilled artisan to have knowledge of known structure for energizing the gain fiber (21) disclosed by Fermann et al.

Art Unit: 3663

This would have led the skilled artisan to the teaching of Samson et al which discloses that it was known at the time of the present application to have provided first pumping means (P1), second pumping means (P2) and a combiner (WDM 1) in order to energize a Tm gain fiber.

Claims 2-7, 9 and 12 recite inherent properties and elements of known laser pumping sources and, as such, would have been suggested by the laser pumping means disclosed by Samson/

Claim 8 and 13 are taught by the multiplexers of Samson et al.

Pulsed pumping (claims 10 and 11) would have been obvious in applications in which amplification is coordinated with a pulsed source such as the one disclosed by Fermann et al.

Claims 14-22 recite known properties of gain fibers and, as such, would have been suggested by the gain fibers disclosed by either Fermann et al or Samson et al.

The wavelength of operation (claims 23-25) would have depended on the industrial application of the device disclosed by Fermann et al.

Claims 26 - 28 are taught by the PCM of Fermann et al.

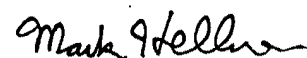
Claims 29 to 39 are taught by the combination of Fermann et al and Samson et al applied to claims 1-28.

Any inquiry concerning this communication should be directed to Mark Hellner at telephone number 571 272 6981.

Mark Hellner

Primary Examiner

AU 3663



Notice of References Cited	Application/Control No. 10/812,608	Applicant(s)/Patent Under Reexamination ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,014,249	01-2000	Fermann et al.	359/341.1
*	B	US-6,340,806	01-2002	Smart et al.	219/121.62
*	C	US-6,301,273	10-2001	Sanders et al.	372/6
*	D	US-6,407,853	06-2002	Samson et al.	359/341.31
*	E	US-6,885,683	04-2005	Fermann et al.	372/25
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PTO-1449		Application No.		Applicant(s) Mohammed N. Islam			
Information Disclosure Citation in an Application		Docket Number 074036.0133		Group Art Unit		Filing Date March 30, 2004	
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
MP	A	US 2002/0032468 A1	03/14/2002	Hill et al.	607	2	09/26/2001
	B	US 2002/0082612 A1	06/27/2002	Moll et al.	606	130	10/05/2001
	C	US 2002/0128846 A1	09/12/2002	Miller	704	275	03/12/2001
	D	US 2002/0178003 A1	11/28/2002	Gehrke et al.	704	246	03/09/2001
	E	4,158,750	06/19/1979	Sakoe et al.	179	1	05/26/1977
	F	4,221,997	09/09/1980	Flemming	318	574	12/18/1978
	G	4,275,266	06/23/1981	Lasar	179	1	03/26/1979
	H	4,374,618	02/22/1983	Howard	355	50	03/16/1981
	I	4,403,605	09/13/1983	Tanikawa	128	6	04/20/1981
	J	4,462,080	07/24/1984	Johnstone et al.	364	513.5	11/27/1981
	K	4,516,207	05/07/1985	Moriyama et al.	364	424	02/24/1982
	L	4,523,884	06/18/1985	Clement et al.	414	8	10/08/1981
	M	4,605,080	08/12/1986	Lemelson	177	4	03/25/1985
	N	4,641,292	02/03/1987	Tunnell et al.	367	198	10/21/1985
	O	4,704,696	11/03/1987	Reimer et al.	364	513.5	01/26/1984
	P	4,728,974	03/01/1988	Nio et al.	354	81	05/30/1986
	Q	4,762,455	08/09/1988	Coughlan et al.	414	4	06/01/1987
MP	R	4,776,016	10/04/1988	Hansen	381	42	11/21/1985
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
MP	S	WO 97/15240	01.05.1997	PCT	A61B	19/00	X
	T	WO 97/49340	31.12.1997	PCT	A61B	17/00	X
MP	U	WO 01/50959 A1	19.07.2001	PCT	A61B	6/00	X
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
MP	V	G.S. Edwards et al., "Free-electron-laser-based biophysical and biomedical instrumentation," American Institute of Physics, Vol. 74, No. 7, pp. 3207-3245					2003
	W	Computer Motion, Inc., "501(k) Summary -ZEUS® MicroWrist™ Surgical System and Accessories," 6 pages					09/24/2002
	X	Computer Motion, Inc. "HERMES™ O.R. Control Center - 510(k) Summary of Safety and Effectiveness," 5 pages					10/11/2002
MP	Y	K.M. Joos, et al. "Optic Nerve Sheath Fenestration with a Novel Wavelength Produced by the Free Electron Laser (FEL)," Lasers in Surgery and Medicine, 27:191-205					2000
EXAMINER Mark Hellner				DATE CONSIDERED 02/26/2007			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							

U.S. Patent and Trademark Office

U.S. Patent and Trademark Office PTO-1449		Application No.		Applicant(s) Mohammed N. Islam			
Information Disclosure Citation in an Application		Docket Number 074036.0133		Group Art Unit		Filing Date March 30, 2004	
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
MA	A	4,989,253	01/29/1991	Liang et al.	381	110	04/15/1988
	B	5,078,140	01/07/1992	Kwoh	128	653.1	09/23/1986
	C	5,086,401	02/04/1992	Glassman et al.	395	94	05/11/1990
	D	5,142,930	09/01/1992	Allen et al.	74	469	03/29/1991
	E	5,230,023	07/20/1993	Nakano	381	110	01/30/1991
	F	5,267,323	11/30/1993	Kimura	381	110	09/07/1990
	G	5,303,148	04/12/1994	Mattson et al.	364	413.01	10/30/1990
	H	5,305,427	04/19/1994	Nagata	395	94	05/15/1992
	I	5,313,306	05/17/1994	Kuban et al.	348	65	06/01/1993
	J	5,345,538	09/06/1994	Narayannan et al.	395	2.84	01/27/1992
	K	5,408,409	04/18/1995	Glassman et al.	364	413.13	12/20/1993
	L	5,544,654	08/13/1996	Murphy et al.	128	660.07	06/06/1995
	M	5,572,999	11/12/1996	Funda et al.	128	653.1	01/26/1995
	N	5,792,204	08/11/1998	Snell	607	32	06/13/1996
	O	5,812,978	09/22/1998	Nolan	704	275	12/09/1996
	P	5,950,629	09/14/1999	Taylor et al.	128	897	04/28/1994
	Q	5,970,457	10/19/1999	Brant et al.	704	275	08/30/1996
MA	R	US 6,185,535 B1	02/06/2001	Hedin et al.	704	270	10/16/1998
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	S						
	T						
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
MA	U	J. Sanghera, I. Aggarwal, "IR Fiber Optics at NRL," 10 pages					
	V	J. Sanghera, L.B. Shaw, I.D. Aggarwal, "Applications of chalcogenide glass optical fibers," Academic of Science, pp. 1-11					2003
	W	B. Rigas, P.T.T. Wong, "Human Colon Adenocarcinoma Cell Lines Display Infrared Spectroscopic Features," Cancer Research, pp. 84-88					01/01/1992
MA	X	G. Edwards, et al., "Comparison of OPA and Mark-III FEL for Tissue Ablation at 6.45 Microns," Department of Physics and Free Electron Laser Laboratory, Duke University, 7 pages					
EXAMINER Mark Hellner				DATE CONSIDERED 02/26/2007			
EXAMINER: Initial if citation considered; whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							
U.S. Patent and Trademark Office							

PTO-1449		Application No.		Applicant(s) Mohammed N. Islam			
Information Disclosure Citation in an Application		Docket Number 074036.0133		Group Art Unit		Filing Date March 30, 2004	
		U.S. PATENT DOCUMENTS					
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
9/10	A	US 6,224,542 B1	05/01/2001	Chang et al.	600	109	01/04/1999
	B	US 6,273,858 B1	08/14/2001	Fox et al.	600	466	06/26/2000
	C	US 6,278,975 B1	08/21/2001	Brant et al.	704	275	08/19/1999
	D	US 6,436,107 B1	08/20/2002	Wang et al.	606	139	03/03/1999
	E	US 6,442,430 B1	08/27/2002	Ferek-Petric	607	32	12/04/2000
	F	US 6,450,172 B1	09/17/2002	Hartlaub et al.	128	899	01/25/2000
	G	US 6,453,201 B1	09/17/2002	Daum et al.	607	62	12/28/1999
	H	US 6,462,500 B1	10/08/2002	L'Hegarat et al.	318	649	06/14/2000
9/10	I	US 6,463,361 B1	10/08/2002	Wang et al.	700	258	09/22/1994
	J						
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FOREIGN PATENT DOCUMENTS							
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NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
9/10	U	Glenn Edwards, "Biomedical and potential clinical applications for pulsed lasers operating near 6.45 μm ," Society of Photo-Optical Instrumentation Engineers, 2 pages					1995
9/10	V	PASSAT, "Solid-State Lasers and Optical Components," 5 pages					07/14/2003
9/10	W	P.A. Thielen and L.B. Shaw, et al., "Small-core As-Se fiber for Raman amplification," OPTICS LETTERS, Vol. 28, No. 16, 3 pages					August 15, 2003
	X						
	Y						
EXAMINER Mark Hellner				DATE CONSIDERED 02/26/2007			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							

U.S. Patent and Trademark Office

Index of Claims



Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

√	Rejected
=	Allowed

—	(Through numeral) Cancelled
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N	Non-Elected
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A	Appeal
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Claim		Date			
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Mark Hellner

3663

[illegible]

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

[illegible]

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	7973	pump with laser	USPAT	OR	OFF	2007/02/21 13:20
L2	16877	wavelength with shift\$	USPAT	OR	OFF	2007/02/21 13:20
L3	1245	1 and 2	USPAT	OR	OFF	2007/02/21 13:20
L4	4917	gain with fiber	USPAT	OR	OFF	2007/02/21 13:20
L5	528	3 and 4	USPAT	OR	OFF	2007/02/21 13:21

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	("ramanwithwavelengthwithshifter") .PN.	US-PGPUB; USPAT	OR	OFF	2007/02/21 14:02
L2	69	raman with wavelength with shifter	US-PGPUB; USPAT	OR	OFF	2007/02/21 14:02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Filing Date: March 30, 2004
Art Unit: 3663
Examiner: Mark Hellner
Confirmation No.: 3187
Title: System and Method for Voice Control of Medical Devices

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO ELECTION/RESTRICTION

In response to the Official Action mailed October 11, 2006 and a telephone interview with the Examiner on December 7, 2006, solely for the purpose of advancing prosecution of this case and without addressing the veracity of Examiner's restriction requirement, Applicant hereby elects to prosecute Group I (Claims 1-39). Group II (Claims 40-45) is withdrawn from the above-identified patent application without prejudice or disclaimer. This election is made to expedite issuance of a patent from this Application. Applicant does not necessarily agree with or acquiesce to the Examiner's conclusion reflected in the Office Action.

In the Claims

Please amend the claims as follows:

1. (Original) A mid-infrared light source, comprising:
a combiner coupled to at least a first pump laser and a second pump laser, the combiner operable to couple a first optical signal generated by the first pump laser and a second optical signal generated by the second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and
a Raman wavelength shifter coupled to the gain fiber, at least a portion of the Raman wavelength shifter comprising a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to a longer signal wavelength.
2. (Original) The mid-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.
3. (Original) The mid-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.
4. (Original) The mid-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.
5. (Original) The mid-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.
6. (Original) The mid-infrared light source of Claim 1, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

7. (Original) The mid-infrared light source of Claim 6, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second optical signal.

8. (Original) The mid-infrared light source of Claim 7, wherein the multiplexer is selected from the group consisting of a wavelength division multiplexer, a polarization multiplexer, and a power combiner.

9. (Original) The mid-infrared light source of Claim 1, wherein the second optical signal comprises a selected wavelength selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm, and 1510 nm.

10. (Original) The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

11. (Original) The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

12. (Original) The mid-infrared light source of Claim 1, wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

13. (Original) The mid-infrared light source of Claim 1, wherein the combiner is selected from the group consisting of a wavelength division multiplexer and a power coupler.

14. (Original) The mid-infrared light source of Claim 1, wherein the gain fiber is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

15. (Original) The mid-infrared light source of Claim 1, wherein at least a portion of the first waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

16. (Original) The mid-infrared light source of Claim 1, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

17. (Original) The mid-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

18. (Original) The mid-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure comprises an optical fiber.

19. (Original) The mid-infrared light source of Claim 18, wherein the optical fiber comprises a mid-infrared optical fiber.

20. (Original) The mid-infrared light source of Claim 18, wherein the optical fiber is selected from the group consisting of a chalcogenide fiber and a ZBLAN fiber.

21. (Original) The mid-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure is selected from the group consisting of a ZBLAN waveguide, a sulfide waveguide, a selenide waveguide, and a telluride waveguide.

22. (Original) The mid-infrared light source of Claim 1, wherein at least a portion of the second waveguide structure comprises a single mode optical fiber.

23. (Original) The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength of approximately 1.7 microns or more.

24. (Original) The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

25. (Original) The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of five (5) microns to seven (7) microns.

26. (Original) The mid-infrared light source of Claim 1, further comprising a wavelength separator coupled to the Raman wavelength shifter and capable of transmitting at least a portion of a selected wavelength from the Raman wavelength shifter.

27. (Original) The mid-infrared light source of Claim 26, wherein the wavelength separator is selected from the group consisting of a demultiplexer, one or more partially transmissive gratings, one or more partially transmitting mirrors, one or more Fabry Perot filters and one or more dielectric gratings.

28. (Original) The mid-infrared light source of Claim 1, further comprising at least a third waveguide structure coupled to the Raman wavelength shifter, wherein the third waveguide structure comprises a coupling loss of no more than five (5) decibels.

29. (Original) A method of shifting an optical signal wavelength to a longer optical signal wavelength, comprising:

coupling a first optical signal generated by a first pump laser and a second optical signal generated by a second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and

shifting at least one wavelength of the first optical signal to a longer signal wavelength using a second waveguide structure coupled to the gain fiber.

30. (Original) The method of Claim 29, wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

31. (Original) The method of Claim 30, wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second optical signal.

32. (Original) The method of Claim 29, wherein the second optical signal comprises a selected wavelength selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

33. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

34. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

35. (Original) The method of Claim 29, wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

36. (Original) The method of Claim 29, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

37. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength of approximately 1.7 microns or more.

38. (Original) The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

39. (Original) The method of Claim 29, further comprising transmitting at least a portion of a selected wavelength from the Raman wavelength shifter into a third waveguide structure.

40. (Withdrawn) A mid-infrared light source, comprising:
a gain fiber operable to receive at least a first optical signal comprising one or more wavelengths, the gain fiber comprising a first waveguide structure; and
a second waveguide structure coupled to the gain fiber and operable to wavelength shift at least one wavelength of the first optical signal to a longer wavelength optical signal, the longer wavelength optical signal comprising a wavelength in the range of two (2) microns to ten (10) microns.

41. (Withdrawn) The mid-infrared light source of Claim 40, wherein at least one wavelength of the first optical signal is selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

42. (Withdrawn) The mid-infrared light source of Claim 40, wherein the longer wavelength optical signal comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

43. (Withdrawn) The mid-infrared light source of Claim 40, wherein the longer wavelength optical signal comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

44. (Withdrawn) The mid-infrared light source of Claim 40, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least one wavelength of the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

45. (Withdrawn) The mid-infrared light source of Claim 40, wherein the longer wavelength optical signal comprises a wavelength in the range of five (5) microns to seven (7) microns.

REMARKS

Applicant thanks Examiner Hellner for the telephone conference on December 7, 2006 and for his thoughtful consideration of this case. This Application has been carefully reviewed in light of the Office Action mailed October 11, 2006. To advance prosecution of this application, Applicant has responded to each notation by the Examiner. Applicant respectfully requests reconsideration, further examination, and favorable action in this case.

Interview Summary

Applicant's attorney conducted a telephonic conference with Examiner Hellner on December 7, 2006. Pursuant to M.P.E.P. §713.04, Applicant submits this summary of the telephonic interview to record Applicant's understanding of the substance of the interview. If Applicant's understanding is inaccurate, notice of such is appreciated.

During the interview, Applicant's Attorney and the Examiner discussed pending Claims 1-45 and the Examiner's identification of seven patentably distinct species (Inventions A-G). Applicant understands that the Examiner has agreed to group the pending claims into two groups, Group I (Claims 1-39) and Group II (Claims 40-45), instead of the seven patentably distinct species previously identified in the Office Action dated October 11, 2006. Based on this understanding, solely for the purpose of advancing prosecution of this case, and without addressing the veracity of the Examiner's election/restriction requirement, Applicant hereby elects to prosecute Group I (Claims 1-39). Applicant, therefore, withdraws Group II (Claims 40-45) from the above-identified patent application without prejudice or disclaimer.

Response to Election/Restriction:

Applicant respectfully submits that the election of species requirement set forth in the October 11, 2006 Office Action is improper in that the inventions as disclosed and claimed are species under a claimed genus and related. Thus, Applicant traverses the election of species requirement. According to the Examiner, the present application contains claims directed to seven patentably distinct species: (A) Figure 9A; (B) Figure 9B; (C) Figure 9C; (D) Figure 8A; (E) Figure 8B; (F) Figure 8C; and (G) Figure 8D. The written description of the present application provides that each of FIGURES 9A, 9B, and 9C illustrate example

embodiments of pump sources that are capable of generating a pump signal for use in a Raman wavelength shifter, while each of FIGURES 8A, 8B, 8C, and 8D illustrate example embodiments of Raman wavelength shifters and/or Raman oscillators. *See e.g.*, Page 44, Lines 8-11, and Page 38, Lines 7-11, respectively. Applicant contends that each of independent Claims 1, 21, and 40 are at least a *genus* claim that includes more than one of the seven patentably distinct species identified by the Examiner within the breadth and scope of the claim. For example, the breadth and scope of independent Claim 1 includes at least some elements from species (B) Figure 9B, (C) Figure 9C, (D) Figure 8A, (E) Figure 8B, (F) Figure 8C, and (G) Figure 8D. Thus, for at least the above identified reasons, Applicant submits that the Examiner's election requirement is improper and respectfully requests that the requirement be withdrawn.

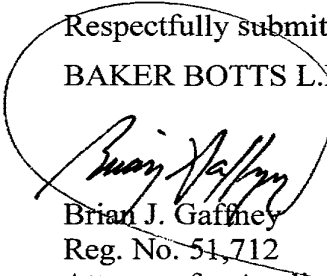
As indicated in the Interview Summary section above, Applicant understands that the Examiner has agreed to group the pending claims into two groups, Group I (Claims 1-39) and Group II (Claims 40-45), instead of the seven patentably distinct species previously identified in the Office Action dated October 11, 2006. Based on this understanding, solely for the purpose of advancing prosecution of this case, and without addressing the veracity of the Examiner's election/restriction requirement, Applicant hereby elects to prosecute Group I (Claims 1-39). Applicant, therefore, withdraws Group II (Claims 40-45) from the above-identified patent application without prejudice or disclaimer.

CONCLUSION

If the Examiner feels that a conference would advance prosecution of this Application in any manner, Brian J. Gaffney stands willing to conduct such a telephone interview at the convenience of the Examiner. Mr. Gaffney may be reached at 214-953-6682.

Applicant believes no fee is due. However, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.


Brian J. Gaffney
Reg. No. 51,712
Attorney for Applicant

Date: Dec. 11, 2006

Correspondence Address:

Customer No.:

05073

Electronic Acknowledgement Receipt

EFS ID:	1365011
Application Number:	10812608
International Application Number:	
Confirmation Number:	3187
Title of Invention:	System and method for voice control of medical devices
First Named Inventor/Applicant Name:	Mohammed N. Islam
Customer Number:	5073
Filer:	Brian J Gaffney/Elizabeth Turlo
Filer Authorized By:	Brian J Gaffney
Attorney Docket Number:	074036.0133
Receipt Date:	11-DEC-2006
Filing Date:	30-MAR-2004
Time Stamp:	15:00:52
Application Type:	Utility

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	0740360133elecrestr.pdf	397629	no	10

Warnings:

Information:	
Total Files Size (in bytes):	397629
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.	

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2003

Application or Docket Number

10812608

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	45	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	45 minus 20 =	25
INDEPENDENT CLAIMS	3 minus 3 =	0
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

12/11/06

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	45	Minus 45	= 0
Independent	3	Minus 3	= 0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

SMALL ENTITY TYPE ☐ OR

OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
X\$ 9=	225	OR	X\$18=	
X43=	0	OR	X86=	
+145=	0	OR	+290=	
TOTAL	610	OR	TOTAL	

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	=
Independent		Minus	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	=
Independent		Minus	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Document code: WFEE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,608	03/30/2004	Mohammed N. Islam	074036.0133	3187

5073 7590 10/11/2006

BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

EXAMINER

HELLNER, MARK

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/812,608	Applicant(s) ISLAM, MOHAMMED N.	
	Examiner Mark Hellner	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-45 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) ☐ Other: ____. |

DETAILED ACTION

Election/Restrictions

This application contains claims directed to the following patentably distinct species: Invention A (figure 9A); invention B (figure 9B); Invention C (figure 9C); Invention D (figure 8A); Invention E (figure 8B); Invention F (figure 8C) and Invention G (figure 8D). The species are independent or distinct because the specification of the present application has identified them as separate embodiments.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Any inquiry concerning this communication should be directed to Mark Hellner at telephone number 571 272 6981.

Mark Hellner

Primary Examiner

AU 3663

Mark Hellner

Index of Claims



Application/Control No.

10/812,608

Examiner

Mark Hellner

Applicant(s)/Patent under Reexamination

ISLAM, MOHAMMED N.

Art Unit

3663

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date											
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Doc Date:**

TC 3700 Inventor Search Program

See attached inventor searches for applications and/or patents to help resolve questions of overlapping subject matter. These searches are provided as an initial examination aid: examiners should perform updated or expanded PALM or EAST inventors searches as appropriate.

Serial Number:

**1.) See attached printout of inventors listed in
PALM**

**2.) See attached EAST Inventor Search
Printout shows Inventor search terms**

Day : Wednesday

Date: 6/21/2006

Time: 14:59:29

**PALM INTRANET**

Inventor Information for 10/812608

Inventor Name	City	State/Country
ISLAM, MOHAMMED N.	ANN ARBOR	MICHIGAN

Appln Info	Contents	Petition Info	Atty/Agent Info	Continuity Data	Foreign Data
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Search Another: Application# or Patent#

PCT / / or PG PUBS #

Attorney Docket #

Bar Code #

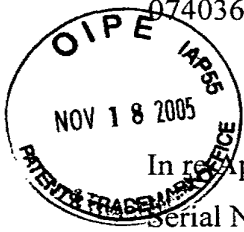
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US 20050142192 A1	US- PGPUB	20050630	Oral administration of [2-(8,9-dioxo-2,6-diazabicyclo[5.2.0]non-1(7)-en-2-yl)alkyl] phosphonic acid and derivatives	424/464	514/80	Benjamin, Eric J. et al.
US 20040014355 A1	US- PGPUB	20040122	Low profile cardiac leads	439/502		Osypka, Thomas P. et al.
US 20030058523 A1	US- PGPUB	20030327	Multi-stage optical amplifier and broadband communication system	359/334		Islam, Mohammed
US 20030016438 A1	US- PGPUB	20030123	Gain control in nonlinear fiber amplifier stages	359/334		Islam, Mohammed
US 20020015219 A1	US- PGPUB	20020207	Nonlinear fiber amplifiers used for a 1430-1530nm low-loss window in optical fibers	359/334		Islam, Mohammed
US 6813066 B2	USPAT	20041102	Gain control in nonlinear fiber amplifier stages	359/334	359/337.1; 359/341.31	Islam; Mohammed
US 6618192 B2	USPAT	20030909	High efficiency raman amplifier	359/334		Islam; Mohammed et al.
US 6603594 B2	USPAT	20030805	Multi-stage optical amplifier and broadband communication system	359/334		Islam; Mohammed
US 6597493 B2	USPAT	20030722	Nonlinear fiber amplifiers used for a 1430-1530nm low-loss window in optical fibers	359/334	359/341.31; 372/6; 372/71	Islam; Mohammed
US 6359725 B1	USPAT	20020319	Multi-stage optical amplifier and broadband communication system	359/334	359/341.32; 372/6	Islam; Mohammed
US 6335820 B1	USPAT	20020101	Multi-stage optical amplifier and broadband communication system	359/334	359/341.32; 372/3	Islam; Mohammed

ATTORNEY'S DOCKET NO.:
074036.0133

PATENT APPLICATION
10/812,608



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
Serial No.: 10/812,608
Date Filed: March 30, 2004
Title: System and Method for Voice Control of Medical Devices

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Elizabeth A. Turlo
Elizabeth A. Turlo

11/15/2005
Date

Second Request for Status

Please advise as to the status of the above-identified patent application. Applicant filed a Request for Status mailed May 31, 2005. Applicant is again requesting the status of a first Office Action, and the status of this case.

If there are any matters that can be cleared up through a telephone conversation, please contact the undersigned attorney for Applicant at (214) 953.6682.

Respectfully submitted,

BAKER BOTTS L.L.P.

Brian J. Gaffney
Reg. No. 51,712
Attorneys for Applicant

BJG/bt

Correspondence Address:

Customer Number:

05073

Date: Nov. 15, 2005

DPW

ATTORNEY'S DOCKET NO.:
074036.0133

PATENT APPLICATION
10/812,608



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mohammed N. Islam
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Dear Sir:

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Elizabeth A. Turlo
Elizabeth A. Turlo

5/31/05
Date

Request for Status

Please advise as to the status of the above-identified patent application. Applicant received a corrected Filing Receipt for the above-identified application on June 10, 2004. Applicant is currently requesting the status of a first Office Action, and the status of this case.

If there are any matters that can be cleared up through a telephone conversation, please contact the undersigned attorney for Applicant at (214) 953.6682.

Respectfully submitted,
BAKER BOTTS L.L.P.

Brian J. Gaffney
Reg. No. 51,712
Attorneys for Applicant

BJG/bt

Correspondence Address:

Customer Number:

05073

Date: *May 31, 2005*

ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

1

APPLICATION FOR U.S. PATENT UNDER 37 C.F.R. § 1.53(b)

UTILITY PATENT APPLICATION TRANSMITTAL FORM

Mail Stop Patent Application
COMMISSIONER FOR PATENTS
Box 1450
Alexandria, Virginia 22313-1450

Sir:

Transmitted herewith for filing is the utility patent application of:

Inventor(s) or Application Identifier:

Mohammed N. Islam

Entitled: SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES

APPLICATION ELEMENTS:

1. ☒ This Fee Transmittal Form
2. Applicant is:
☐ Large Entity
☒ Small Entity
☐ Small Entity Statement enclosed
☒ Small Entity Statement filed in prior application.
Status still proper and desired.
3. ☒ Specification (57 Total Pages)
4. ☒ Drawings (8 Total Sheets)
 Formal
 ☒ Informal
5. ☒ Combined Declaration and Power of Attorney
 (2 Total Pages)
 ☐ Newly executed (original or copy)
 ☒ Copy from a prior application
 (for continuation/divisional only)

DAL01:788674

6. The accompanying application is:

☐ Original
☒ Continuation
☐ Divisional
☐ Continuation-In-Part (CIP)
Prior Application No.: 10/757,341
Filed: January 13, 2004
Examiner: Unknown
Group/Art Unit: Unknown

which is hereby incorporated by reference therein.

(For Continuation or Divisional Applications only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5 above, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.)

7. ☐ Priority of foreign Application No. _____,
filed on _____ is claimed under 35 U.S.C.
§ 119.

☐ A certified copy is attached.

☐ A certified copy was filed in prior Application
Serial No. _____, filed _____.

8. ☒ The prior application is assigned of record to
Cheetah Omni, LLC, a Delaware corporation, a copy of which is
attached.

FEE CALCULATION:

CLAIMS AS FILED IN THE APPLICATION, LESS ANY CLAIMS CANCELLED
BY PRELIMINARY AMENDMENT OR ADDED BY PRELIMINARY AMENDMENT

FEE CALCULATION					FEE
	Number		Number Extra	Rate	Basic Fee
					\$ 770.00
Total Claims:	45	- 20 =	25	X \$18 =	\$ 450.00
Independent Claims	3	- 3 =	1	X \$86 =	\$ 0.00
Total of Above					\$1,220.00
Less 50% for Small Entity					\$ 610.00
TOTAL FILING FEE =					\$ 610.00

ACCOMPANYING APPLICATION PARTS:

9. ☐ An Assignment of the invention to _____ is attached.
A separate cover sheet in compliance with 37 C.F.R. § 3.28 and
§ 3.31 is included with an Assignment recordal fee of
\$____pursuant to 37 C.F.R. § 1.21(h).

10. ☒ Information Disclosure Statement (IDS) PTO-1449
☐ Copies of IDS Citations.
☒ Pursuant to 37 C.F.R. § 1.98(d), copies of
these references are not being furnished.

11. ☐ Preliminary Amendment

12. ☒ Certificate of Mailing

13. ☒ Return Receipt Postcard

14. ☒ Nonpublication Request

15. ☐ Other _____

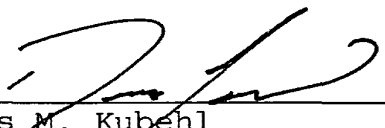
ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

4

16. [X] A check in the amount of \$610.00 to satisfy filing fee requirements under 37 C.F.R. § 1.16. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicant



Douglas M. Kubehl
Reg. No. 41,915

Date: 3-30-04

Correspondence Address:

Customer Number 05073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re-Application of: Mohammed N. Islam
Filing Date: March 30, 2004
For: SYSTEM AND METHOD FOR VOICE CONTROL OF
MEDICAL DEVICES

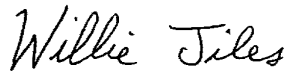
Mail Stop PATENT APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that the attached Patent Application (57 pages), Fee Transmittal (4 pages), Declaration and Power of Attorney (2 pages)(copy), Drawings (8 pages), Nonpublication Request (1 page), Information Disclosure Statement along with a three-page PTO-1449 Form, a check in the amount of \$610.00, a Baker Botts return acknowledgment postcard (1 card), and this Certificate of Mailing are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 30th day of March, 2004 addressed to Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.



Willie Jiles

Express Mail Receipt
No. EV 324645882 US
Attorney's Docket: 074036.0133

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)	Inventor	Mohammed N. Islam	
		SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES	
	Atty Docket Number	074036.0133	

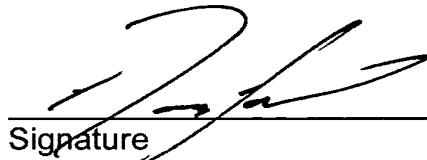
I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

BAKER BOTTS L.L.P.
Attorneys for Applicant

3-30-04

Date


Signature

Douglas M. Kubehl

Typed or printed name

Reg No. 41,915

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

SYSTEM AND METHOD FOR VOICE CONTROL OF
MEDICAL DEVICES

RELATED APPLICATIONS

This application is a continuation of U.S. Patent Application Serial No. 10/757,341, entitled "*System and Method for Voice Control of Medical Devices*" filed 5 January 13, 2004, which is a continuation of U.S. Patent Application Serial No. 10/652,276 entitled "*System and Method for Voice Control of Medical Devices*" filed August 29, 2003. Application Serial No. 10/652,276 claims the benefit under 35 U.S.C. §119(e) to U.S. Provisional 10 Patent Application No. 60/408,025 entitled "*Voice Control of Medical Instruments and Devices*" filed September 3, 2002.

15 TECHNICAL FIELD OF INVENTION

This invention relates generally to medical devices and more particularly to a system and method for voice control of medical devices.

OVERVIEW

Medical procedures typically use medical instruments or devices that tend to require a high level of manual dexterity on the part of medical professionals. To
5 achieve this high level of dexterity, medical professionals require years of training and practice. This high level of dexterity and the strain imposed on the medical professional when using those instruments can cause the medical professional to become fatigued during
10 medical procedures. For example, certain medical instruments require the medical professional to use both hands and to stand next to the patient, sometimes in an awkward position through the entire procedure. This can create fatigue, thereby limiting the number of procedures
15 that the medical professional is able to perform in a given period. In addition, the high level of fatigue may lead to unnecessary and dangerous errors occurring during medical procedures.

SUMMARY OF EXAMPLE EMBODIMENTS

In one embodiment, a medical device comprises an insertable portion capable of being inserted into an orifice associated with a body of a patient. The insertable portion comprising an automated head unit capable of being manipulated in at least two axes of motion based at least in part on one or more control signals. The medical device further comprises one or more controllers coupled to the automated head unit. In one particular embodiment, the one or more controllers generate the one or more control signals based at least in part on an input signal.

In another embodiment, a medical device capable of minimizing tissue damage comprises an insertable portion capable of being inserted into an orifice associated with a body of a patient. The medical device further comprises one or more sensors coupled to the insertable portion. The one or more sensors capable of generating a feedback signal capable of being used to substantially minimize damage to tissue associated with the patient.

In yet another embodiment, a medical device capable of being used in a medical procedure comprises a pump laser capable of generating a pump signal. The medical device further comprises a Raman wavelength shifter coupled to the pump laser, at least a portion of the wavelength shifter comprising a waveguide structure. In one particular embodiment, the Raman wavelength shifter generates an output optical signal comprising a wavelength of approximately 1.7 microns or more.

In still another embodiment, a medical device capable of being used in a medical procedure comprises a Raman wavelength shifter operable to generate an optical

signal comprising a mid-infrared wavelength. At least a portion of the Raman wavelength shifter comprises a chalcogenide waveguide.

In another embodiment, a system for controlling a medical device includes a monitor capable of communicating medical information associated with a patient and a communication device capable of receiving one or more input signals from a user. In one particular embodiment, the one or more input signals are based at least in part on the medical information displayed on the monitor. The system further includes one or more processors coupled to the communicated device and operable to convert the one or more input signals into one or more control signals capable of being used to manipulate a medical device.

Depending on the specific features implemented, particular embodiments may exhibit some, none, or all of the following technical advantages. Various embodiments may be capable of reducing medical professional fatigue through the implementation of a control system capable of manipulating a medical device through voice commands. Some embodiments may be capable of controlling a medical device from a remote location. Other embodiments may be capable of reducing the level of dexterity required of a medical professional when performing a medical procedure.

Other technical advantages will be readily apparent to one skilled in the art from the following figures, description, and claims. Moreover, while specific advantages have been enumerated, various embodiments may include all, some, or none of the enumerated advantages.

BRIEF DESCRIPTION OF THE DRAWINGS

To provide a more complete understanding of the present invention and certain features and advantages, thereof, reference is made to the following description
5 taken in conjunction with the accompanying drawings, in which:

FIGURE 1 illustrates one example embodiment of a medical device control system;

FIGURE 2 illustrates another example embodiment of a
10 medical device control system;

FIGURE 3 illustrates an example medical device capable of being inserted into a patient's body during a medical procedure;

FIGURE 4 is a block diagram illustrating a flow of
15 command signals from a medical professional to a medical device in a medical device control system;

FIGURE 5 is a flow chart illustrating an exemplary method for processing a voice control signal and/or a command signal received by a medical device control
20 system;

FIGURE 6A compares a surgical incision made using a 2.94 micron optical signal wavelength to a surgical incision made using a 6.45 micron optical signal wavelength;

FIGURE 6B illustrates example evanescent spectra in
25 different cell-type regions;

FIGURE 7 illustrates example attenuation characteristics of several optical fibers based on wavelength;

FIGURES 8A through 8D are block diagrams
30 illustrating example embodiments of Raman wavelength shifters and/or Raman oscillators capable of shifting a

pump signal to an output signal wavelength of 1.7 microns or more; and

FIGURES 9A through 9C are block diagrams illustrating example embodiments of pump sources that are
5 capable of generating a pump signal for use in a Raman wavelength shifter.

DESCRIPTION OF EXAMPLE EMBODIMENTS

FIGURE 1 illustrates one example embodiment of a medical device control system 100. In this example, system 100 includes a medical device 10, a manipulator 40, a microphone 50, a display device 60, and a host 70. In various embodiments, system 100 may be capable of receiving voice commands associated with the manipulation of medical device 10 from a medical professional, such as a nurse, a medical assistant, a medical technician, and/or a doctor. In some cases, system 100 is capable of assisting a medical professional during a medical procedure by processing data signals associated with one or more voice commands and manipulating medical device 10 in response to those commands.

Medical device 10 may comprise any device or instrument that a medical professional needs to perform a medical procedure. Medical device 10 can comprise, for example, a surgical scalpel, a scope, a laser, an imaging device, a microscope, or a combination of these or any other suitable device. As used throughout this document, the term "scope" refers to any medical device capable of entering a patient's body, such as endoscopes, colonoscopes, gastroscopes, enteroscopes, bronchoscopes, laryngoscopes, choledochoscopes, sigmoidoscopes, duodenoscopes, arthoroscopes, cystoscopes, hysteroscopes, laparoscopes, or a combination of these or any other suitable device.

In one particular embodiment, medical device 10 comprises an endoscope. In those cases, the endoscope may comprise an insertable portion capable of being inserted through an orifice associated with a patient. In other embodiments, the insertable portion may be

capable of being guided through the patient's orifice, and capable of collecting biological samples from the patient for investigation. The orifice associated with the patient may comprise, for example, a throat, a mouth, a nasal passage, an orifice created by the medical professional, and/or any other suitable orifice. In some embodiments, medical device 10 may include a fiber-optic cable with a lens system at the end that is capable of sending images to a camera and/or a display device, such as display device 60.

In other embodiments, medical device 10 may comprise one or more sensors coupled to feedback control circuitry that is capable of minimizing collateral tissue damage during a medical procedure. In various embodiments, the one or more sensors and the control circuitry may be capable of providing positioning information to a medical professional and/or a controller, such as system controller 90. In other embodiments, the one or more sensors and the control circuitry may be capable of providing data associated with one or more physiological parameters associated with the patient to a medical professional and/or a controller. In some cases, the one or more sensors may be capable of detecting and/or alerting a medical professional or a controller when medical device 10 is in close proximity to and/or in contact with tissue. In other cases, the one or more sensors and the control circuitry may be capable of detecting when medical device 10 is in contact with tissue and capable of overriding control signals received by medical device 10.

In this example, manipulator 40 includes an actuation unit 20 and a supporting structure 30.

Actuation unit 20 may house one or more control systems capable of receiving control signals and manipulating medical device 10 in response to those control signals. The one or more control systems may comprise, for
5 example, a mechanical control system, an electrical control system, or a combination of these or any other control system. As used throughout this document, the phrase "mechanical control system" refers to a control system that at least partially includes mechanical
10 components. In various embodiments, actuation unit 20 can implement a mechanical control system, such as a hydraulic system, pneumatic system, or a pulley guide-wire system.

Supporting structure 30 may comprise a robotic arm,
15 one or more pivoted links, multiple links connected together to move in a "scissor-like" manner, or any other structure capable of supporting and manipulating medical device 10. Although this example depicts manipulator 40 and medical device 10 as separate devices, manipulator 40 and medical device 10 can comprise a unitary medical
20 apparatus capable of performing the desired functionalities without departing from the scope of the present disclosure. For example, manipulator 40 and medical device 10 can be combined to form a unitary
25 medical apparatus, such as an endoscope, having an automated portion.

In some embodiments, a freedom of motion associated with manipulator 40 can have a resolution that substantially replicates the manual dexterity of a
30 medical professional and/or a manual medical device used by the medical professional. In some cases, manipulator 40 may have a step size and/or angle of rotation step

size that is substantially similar to the manual dexterity of a medical professional and/or a manual medical device used by the medical professional. For example, the number of degrees of manipulation freedom
5 associated with medical device 10 can match the number of degrees of manipulation freedom currently available on manual devices. That is, if a conventional manual device that has four degrees of freedom in the x-y plane, then the range of motion associated with manipulator 40 can
10 include at least four degrees of freedom in the x-y plane. In some embodiments, manipulator 40 may include manual override controls that allow a medical professional to exercise manual control of medical device 10.

15 Manipulator 40 is coupled to host 70 through a first communication link 45. As used throughout this document, the term "couple" and or "coupled" refers to any direct or indirect communication between two or more elements, whether or not those elements are in physical contact
20 with one another. In this example, first communication link 45 is operable to facilitate the communication of command/data signals 47 between manipulator 40 and host 70. Command/data signals 47 may comprise, for example, video signals from a video device coupled to medical
25 device 10, data obtained by sensors coupled to medical device 10, or manipulation commands generated in response to voice commands, auxiliary input commands, and/or automated commands.

30 In this example, host 70 is capable of performing a desired communicating and/or computing functionality. For example, host 70 may be capable of at least partially contributing to the manipulation of medical device 10.

In other embodiments, host 70 may be capable of collecting, entering, processing, storing, retrieving, amending, and/or dispatching medical data during a medical procedure. In operation, host 70 may execute
5 with any of the well-known MS-DOS, PC-DOS, OS-2, MAC-OS, WINDOWS™, UNIX, or other appropriate operating systems. In some embodiments, host 70 may include a graphical user interface (GUI) 72 that enables a medical professional to display medical data and/or medical video associated with
10 medical device 10. Host 70 may comprise, for example, a desktop computer, a laptop computer, a server computer, a personal digital assistant, and/or any other computing or communicating device or combination of devices.

In this example, host 70 includes system controller
15 90 capable of processing, collecting, storing, retrieving, and/or amending medical data and/or video during a medical procedure. System controller 90 may comprise one or more computers, an embedded microprocessor, or any other appropriate device or
20 combination of devices capable of processing and/or generating voice command signals 47 and/or 57. In operation, system controller 90 may execute with any of the well-known MS-DOS, PC-DOS, OS-2, MAC-OS, WINDOWS™, UNIX, or other appropriate operating systems. In this
25 embodiment, system controller 90 may implement voice recognition software operable to process voice command signals 57. For example, system controller 90 may implement one or more voice recognition software programs, such as ViaVoice or Dragon Speech Recognition
30 software, or any appropriate proprietary or non-proprietary voice recognition software. In certain embodiments, the voice recognition software may be

programmed to recognize the medical professional's voice and commands may be customized to the medical professional's preferences. In addition, the voice recognition software may be capable of filtering out
5 background noise.

System controller 90 is operable to process voice command signals 57, generate command/data signals 47 in response to the voice command, and communicate the command/data signals 47 to manipulator 40. System
10 controller 90 may also be used to collect and record data using a memory storage device. System controller 90 may be operable to provide data associated with a patient's medical status during a medical procedure to the medical professional using display device 60 and/or GUI 72, or
15 any other appropriate devices.

In this embodiment, host 70 also includes an auxiliary input device 80 coupled to system controller 90. Although a keyboard is depicted in this example, any other device capable of inputting commands and/or data
20 may be used without departing from the scope of this disclosure. In this example, auxiliary device 80 is operable to facilitate manual entry of manipulation commands to supplement and/or replace voice commands. In addition, the medical professional may use auxiliary
25 device 80 to input data into system controller 90, such as the patient's physiological parameters, for example, blood pressure, heart rate, blood oxygen level, or to retrieve data stored in a memory device associated with host 70.

30 In this example, system 100 also includes display device 60 and a graphical user interface (GIU) 72, each capable of displaying medical information, such as

medical data and/or medical video. Display device 60 and GUI 72 may comprise, for example, a monitor, a LED, a heads-up display, virtual reality goggles, a closed-circuit television, a CAVE environment, or any other
5 device or combination of devices capable of displaying. In some cases, display device 60 and GUI 72 may display a live video image from a video device associated with medical device 10, information about a patient's medical status, such as the current state of any number of the
10 patient's physiological parameters, information about the particular medical device 10 being used, or any other information that may assist a medical professional during a medical procedure. In this example, display device 60 is coupled to host 70 through a third communication link
15 65, which is operable to facilitate the communication of data signals 67 to and/or from host 70.

In this example, system 100 also includes communication device 50 that enables a medical professional to communicate with host 70. Communication
20 device 50 can comprise any device that enables a medical professional to communicate with host 70. Communication device 50 may comprise, for example, a telephone, a wireless device, a voice-over-IP device, a unidirectional microphone attached to a headset worn by a medical
25 professional, a bi-directional microphone, or any other suitable communicating device or combination of devices. Communication device 50 may be selectively attached to and/or placed near the medical professional for ease of use. Attaching communication device 50 to the medical
30 professional can, in some cases, advantageously minimize background noise. Although system 100 includes one communication device 50 in this example, any other number

of communication devices may be used without departing from the scope of the present disclosure. Communication device 50 is coupled to host 70 through a second communication link 55, which is operable to facilitate the communication of voice command signals 57 between communication device 50 and host 70.

In the illustrated embodiment, system 100 includes at least a first communications link 45 a second communications link 55, and a third communications link 65 each operable to facilitate the communication of data to and/or from host 70. Communications links 45, 55, and 65 may include any hardware, software, firmware, or combination thereof. In various embodiments, communications link 45, 55, and 65 may comprise any communications medium capable of assisting in the communication of analog and/or digital signals. Communications links 45, 55, and 65 may, for example, comprise a twisted-pair copper telephone line, a fiber optic line, a Digital Subscriber Line (DSL), a wireless link, a USB bus, a PCI bus, an Ethernet interface, or any other suitable interface operable to assist in the communication of information to and/or from network 104.

In conventional medical procedures involving a scope, a medical professional manually manipulates the medical device based on feedback from the medical device. The medical professional typically uses one hand to hold the medical device and guide it into and through a patient's body. The medical professional's other hand is used to manipulate the manual controls of the medical device. Thus, conventional systems typically require significant manual dexterity, which can result in a significant amount of strain on the medical professional.

Unlike conventional procedures, system 100 comprises a communication device 50 that enables a medical professional to manipulate medical device 10 using voice commands, auxiliary input commands, and/or automated
5 commands. Allowing a medical professional to use voice commands and/or automated commands can significantly reduce the manual dexterity, and the resulting strain, imposed on the medical professional during a medical procedure.

10 In operation, a medical professional can speak voice commands into communication device 50 for communication to host 70. Host 70 receives voice command signals 57 from communication device 50 and processes those signals using a voice recognition module associated with host 70.
15 Host 70 converts the voice command signals into command/data signals 47 and communicates signals 47 to manipulator 40. Manipulator 40 responds by causing medical device 10 to perform its desired function. Voice commands may comprise, for example, a voice to take a
20 photograph of a portion of the patient's body, a voice command to change an image size by zooming in or out, or any other suitable voice command capable of causing medical device 10 to perform its functionality. In other embodiments, host 70 is capable of automatically
25 generating command/data signals 47 based at least in part on data received from medical device 10 through communication link 47.

FIGURE 2 illustrates another example embodiment of a medical device control system 300. System 300 includes
30 system 150 for remote manipulation of a medical device 210 and system 200 for voice control of medical device 210. In this example, system 150 is capable of

controlling at least a portion of system 200 from a remote location. For example, a medical professional may use system 150 to remotely control system 200 in the case where the medical professional is not located near system
5 200. The remote location may comprise, for example, a different location in the hospital that includes system 200, a location in a different hospital, or any other location.

System 150 can include a communication device 155, a
10 display device 160, a first auxiliary input device 165, and a second auxiliary input device 180. The structure and function of communication device 155, display device 160, and second auxiliary input device 180 can be substantially similar to the structure and function of
15 communication device 50, display device 60, and auxiliary input device 80, respectively, of FIGURE 1. First auxiliary input device 165 may comprise, for example, a joystick, a computer mouse, a rollerball, knobs, levers, buttons, touchpads, touchscreens, or any other
20 appropriate control device capable of being used to control manipulator 240. In this example, a medical professional can use first auxiliary input device 165 to control manipulator 240 from the remote location.

In this embodiment, system 200 includes a medical
25 device 210, a manipulator 240, a communication device 250, and a display device 260. System 200 also includes a host 270 comprising GUI 272, a third auxiliary input device 280, and a system controller 290. Although host 270 resides within system 200 in this example, host 270
30 could reside within system 150 or could reside in any location accessible to system 300 without departing from the scope of the present disclosure. The structure and

function of medical device 210, manipulator 240, communication device 250, display device 260, host 270, GUI 272, third auxiliary input device 280, and system controller 290 can be substantially similar to the
5 structure and function of medical device 10, manipulator 40, communication device 50, display device 60, host 70, GUI 72, auxiliary input device 80, and system controller 90, respectively, of FIGURE 1.

System 150 communicates with system 200 over
10 communication link 305. Although communication link 305 comprises a single communication link in this example, any other number of communication links may be used without departing from the scope of the present disclosure. Communications link 305 may include any
15 hardware, software, firmware, or combination thereof. In various embodiments, communications link 305 may comprise a communications medium capable of assisting in the communication of analog and/or digital signals. Communications link 305 may, for example, comprise a
20 twisted-pair copper telephone line, a fiber optic line, a Digital Subscriber Line (DSL), a wireless link, a USB bus, a PCI bus, an Ethernet interface, or a combination of these or other elements.

In some embodiments, a first medical professional
25 can manually insert medical device 210 into a patient. In those cases, system 200 can communicate data to a second medical professional using remote system 150 through communication link 305. The second medical professional, while monitoring display device 160, can
30 remotely manipulate medical device 210 using voice instructions communicated through communication device 155 coupled to communication link 305 to host 270. In

this manner, the medical professional using system 150 can substantially emulate a medical professional's manual control of medical device 210. In other embodiments, the medical professional can remotely manipulate medical
5 device 210 using auxiliary devices 165 and/or 180. In an alternative embodiment, a medical professional can insert medical device 210 into a patient using system 200 locally or using system 150 remotely.

In addition to voice command control and/or
10 auxiliary input device control, other methods of medical device control may be implemented. In some cases, system 150 and/or system 200 can implement a heads-up-display (HUD) capable of controlling and/or manipulating medical device 210 and/or manipulator 240. The HUD may be
15 capable of projecting images onto or near the eyes of a medical professional and capable of sending command signals using a virtual control device attached to the medical professional. In another example, the medical professional may wear a helmet capable of manipulating
20 medical device 210 and/or manipulator 240 based at least in part on command signals generated in response to a motion associated with the head of the medical professional. For example, rotation of the head to the right may indicate that the operator wants the medical
25 device to move to the right.

FIGURE 3 illustrates an example medical device 400. In various embodiments, at least a portion of medical device 400 may be inserted into a patient's body through an orifice during a medical procedure. The orifice may
30 comprise, for example, the patient's throat or mouth, the patient's nasal passages, an incision made during surgery, or any other suitable orifice. In this

particular example, medical device 400 comprises a scope. The scope may comprise, for example, an endoscope, a colonoscope, a gastroscope, a enteroscope, a bronchoscope, a laryngoscope, a choledochoscope, a sigmoidoscope, a duodenoscope, a arthroscope, a cystoscope, a hyteroscope, a laparoscope, or a combination of these or any other suitable device. In various embodiments, medical device 400 can be controlled through, for example, voice commands, auxiliary input command, automated commands, and/or manual commands. In some cases, medical device 400 can be coupled to a medical device control system, such as system 100 or system 300 of FIGURE 1 and FIGURE 2, respectively.

Medical device 400 includes a base portion 410 capable of controlling and/or at least partially contributing to the manipulation of an insertable portion 420. In this example, base portion 410 includes control system 435 capable of at least partially contributing to the control and/or the manipulation of insertable portion 420. Control system 435 may be capable of receiving, processing, executing, and/or communicating one or more signals associated with the manipulation of insertable portion 420. In various embodiments, these signals received by base portion 410 may comprise, for example, voice commands, auxiliary input commands, automated commands, physiological parameters, video data, positioning data, or a combination of these or other signal types.

In various embodiments, control system 435 may reside in a location outside of base portion 410 and/or may be partially or wholly included within base portion 410. Control systems 435 may comprise, for example, a

mechanical control system, an electrical control system,
an electro-mechanical control system, or a combination of
these or any other suitable control system. The phrase
"mechanical control system" refers to a control system
5 that at least partially includes mechanical components.
Mechanical control systems can include, for example,
hydraulic components, pneumatic components, pulleys,
guidewires, gears, actuators, pushrods, sprocket/chain
mechanisms, feedback control circuitry, or any other
10 suitable components.

In this particular embodiment, control system 435
includes a manual override control module 411, an x-axis
control module 412, a y-axis control module 414, and a z-
axis control module 416. Control modules 411, 412, 414,
15 and 416 may include any hardware, software, firmware, or
combination thereof. In some embodiments, control
modules 411, 412, 414, and 416 may comprise buttons,
knobs, dials, control circuitry, or any other suitable
control input device. In this particular embodiment,
20 control modules 412, 414, and 416 operate to receive and
process input signals from a medical professional. In
addition, control modules 412, 414, and 416 operate to at
least partially contribute to the manipulation of
insertable portion 420. The input signals may comprise,
25 for example, voice commands, auxiliary input commands,
and/or manual input commands. In other embodiments,
control modules 412, 414, and 416 operate to receive and
process input signals from a host and/or system
controller. For example, a medical professional can use
30 control modules 412, 414, and 416 to individually control
medical device 400 in the x-, y-, and z-axes,
respectively. In various embodiments, override control

module 411 may be capable of enabling the medical professional to override the automatic operation of medical device 400 as necessary during a medical procedure.

5 Control system 435 may also include touch-screen 417 and controller 418. Controller 418 operates to combine the individual control functions of control modules 412, 414, and 416 into a single controller. For example, a medical professional can use controller 418 and/or touch-
10 screen 417 to manually control medical device 400 in the x-, y-, and z-axes, respectively. Controller 418 can comprise any device capable of controlling the manipulation of insertable portion 420. Controller can comprise, for example, a joystick, a rollerball, knobs,
15 levers, buttons, or any other appropriate control device.

 Control system 435 further includes motors 436, pulleys 432, and guidewires 434. Although motors, pulleys, and guidewires are used in this example, control system 435 can include any other components capable of
20 contributing to the manipulation of insertable portion 420 without departing from the scope of the present disclosure. In this example, motors 436 operate to control the positioning of insertable portion 420 based at least in part on control signals received from modules
25 411, 412, 414, and 416, and/or controller 418. Motors 436 operate to manipulate guidewires 434 coupled to one end of insertable portion 420. In other embodiments, base unit 410 includes actuators, pushrods, sprocket/chain mechanisms, feedback control circuitry, or
30 any other control mechanism appropriate to control insertable portion 420.

In this example, pulleys 432 and motors 436 operate to control the tension in guide wires 434. In some embodiments, each guidewire 434 may comprise two or more segments, each segment comprising a different radial stiffness. For example, a first segment of guidewire 434 may be coupled to pulley 432, and a second segment of guidewire 434 may be coupled to an end of insertable portion 420. In that example, the second segment of guidewire segment may have a radial stiffness that is less than a radial stiffness associated with the first segment guidewire. In various embodiments, the force exerted by guidewires 434 can cause insertable portion 430 to move in a corresponding manner.

Medical device 400 may also include insertable portion 420 connected to base portion 410 and capable of being inserted into an orifice or incision in a patient's body during a medical procedure. In this particular embodiment, a medical profession can, using base portion 410, manipulate insertable portion 420 in the patient's body to perform a medical procedure. In various embodiments, a medical professional can control insertable portion 420 using voice commands, auxiliary input commands, automated commands, and/or manually.

In this example, insertable portion 420 includes a flexible portion 430 and an automated head unit 440. In this particular embodiment, one end of each guidewire 434 is connected to one end of automated head unit 440, while the other end of each guidewire 434 is connected to one of pulleys 432. Although pulleys and guide wires are used to manipulate automated head unit 440, any other appropriate control mechanism may be used without departing from the scope of the present disclosure. In

this example, control system 435 operates to create tension in guide wires 434. The tension in guidewires 434 operates to exert a force on automated head unit 440, which causes automated head unit 440 to move in a corresponding manner. For example, control system 435 may operate to apply tension to one or more guidewires 434 creating a force in the x-plane, which causes automated head unit 440 to move in the x-plane. Any suitable movement of automated head unit 440 in the x-y plane tends to impart a corresponding movement to flexible portion 430 in the x-y plane.

In this example, four guide wires 434 are used to manipulate automated head unit 440 with two guidewires 434 connected along the x-axis and two guidewires 434 connected along the y-axis. In an alternative embodiment, six or more guidewires 434 may be positioned around the periphery of the insertable portion 420, which can allow a medical professional more precise control of medical device 400. In some cases, the movement of automated head unit 440 may be controlled independently of the movement of flexible portion 430. In some embodiments, flexible portion 430 and automated head unit 440 may operate as "telescoping" tubes, where automated head unit 440 may retract into and extend from flexible portion 430 to adjust a length (L) of insertable portion 420. Such a telescoping motion may be controlled through the positioning of pulleys 432 and guidewires 434.

In this particular embodiment, control modules 412, 414, and/or 416 receive and process command signals corresponding to a desired manipulation of insertable portion 420. Control module 412 and control module 414 are operable to control the motion of automated head unit

440 and the entire insertable portion 420 in the x-axis and y-axis, respectively. In some embodiments, control module 416 is operable to adjust the distance that automated head unit 440 moves relative to flexible
5 portion 430. In those cases, control module 416 is operable to cause motor 436 to position the pulleys 432 and guidewires 434 so as to extend and retract automated head unit 440 relative to flexible portion 430. Control module 412 and control module 414 are operable to
10 independently control the motion of automated head unit 440 regardless of length L, enabling insertable portion 420 to have independent motion in the x-, y-, and z-axes.

Insertable portion 420 may also include sensors 442 and a camera 444. Although this example depicts sensors
15 442 as being connected to automated head unit 440, sensors may be connected to any portion of medical device 400 without departing from the scope of the present disclosure. Injury may occur when a medical professional accidentally or mistakenly causes insertable portion 420
20 to contact tissue associated with the patient, which can cause bruising or damage to the tissue. Sensors 442 can comprise any device capable of providing data and/or a signal to a medical professional. Sensors 442 may be capable of generating and transmitting, for example,
25 positioning information associated with insertable portion 420, physiological information associated with the patient, control signals, a signal indicating the presence or absence of blood, or any other data. In one particular embodiment, sensors 442 are capable of
30 generating and transmitting data associated with insertable portion's 420 proximity to tissue of the patient.

In other embodiments, sensors 442 may be capable of detecting a collision with tissue. In those cases, sensors 442 are capable of generating and transmitting a feedback signal to control modules 412, 414, 416, a host
5 coupled to medical device 400, or a system controller coupled to medical device 400. For example, sensors 442 may communicate data indicating that wall tissue of a patient's orifice has been encountered and that device 400 may need to be directed away from that wall to
10 prevent injury to the patient's tissue. In some embodiments, sensors 442 operate to generate alarms associated with medical device 400. For example, one or more sensors 442 may monitor the presence of blood in the orifice, so that the medical professional may be alerted
15 to unexpected or excessive bleeding.

In operation, medical device 400 may be inserted into the patient by inserting insertable portion 420 into the appropriate orifice or incision. In some
embodiments, a medical professional can insert medical
20 device 400 into the patient. In other embodiments, the insertion of medical device 400 into the patient may be performed using a medical device control system implementing a manipulator, such as system 100 and manipulator 40 of FIGURE 1 or system 300 and manipulator
25 240 of FIGURE 2.

In this particular embodiment, medical device 400 is capable of being manipulated in at least three axes of motion. That is, medical device 400 is capable of being
manipulate in the x-axis, y-axis, and z-axis. In other
30 embodiments, medical device 400 is capable of being manipulated in at least two axes of motion. In some embodiments, medical device 400 may be capable of

manipulating insertable portion 420 one axis at a time. In other embodiments, medical device 400 may be capable of manipulating insertable portion 420 one axis at a time and manipulating insertable portion 420 along multiple
5 axes substantially simultaneously. In this example, medical device 400 is capable of manipulating insertable portion 420 along multiple axes substantially simultaneously. As used throughout this document, the phrase "substantially simultaneously" refers to the
10 manipulation of insertable portion 420 and/or automated head unit 440 in multiple axes in response to an input command before responding to a subsequent input command. For example, medical device 400 can manipulate insertable portion 420 along the z-axis and, during that
15 manipulation, medical device 400 can also manipulate insertable portion 420 along the x-axis. In various embodiments, medical device 400 can manipulate automated head unit 440 independently of the movement of flexible portion 430.

20 FIGURE 4 is a block diagram illustrating a flow of command signals from a medical professional to a medical device in a medical device control system 500. In various embodiments, medical device control system 500 can be substantially similar to control system 100 of
25 FIGURE 1 or control system 300 of FIGURE 2. In this example, a communication device 550 receives a voice command 502 from a medical professional. In various embodiments, the structure and function of communication device 550 can be substantially similar to the structure
30 and function of communication device 50 of FIGURE 1. Communication device 550 operates to convert voice command 502 into an electrical voice command signal 504

and to communicate electrical voice command signal 504 to a system controller 590. In various embodiments, the structure and function of system controller 590 can be substantially similar to the structure and function of
5 system controller 90 of FIGURE 1.

In this particular embodiment, system controller 590 comprises a voice recognition module 592 capable of at least partially contributing to one or more functions of system controller 590. That is, voice control module 592
10 is not required to be capable of performing the desired functionality of system controller 590 alone, but may contribute to the performance of the function as part of a larger routine. In this example, voice recognition module 592 at least partially contributes to the
15 conversion of voice command signal 504 to a control signal 506. Voice recognition module 592 may include any hardware, software, firmware, or any combination thereof that is capable of converting voice command signal 504 into control signal 506.

20 System controller 590 also includes a command generator module 594 capable of at least partially contributing to one or more functions of system controller 590. In this example, command generator module 594 operates to receive control signal 506
25 communicated from voice recognition module 592 and at least partially contributes to the conversion of control signal 506 into a command signal 508. Command generator 594 may comprise any hardware, software, firmware, or any combination thereof that is capable of converting control
30 signal 506 into command signal 508. In this example, command generator module 594 communicates command signal 508 to a signal generator module 596 capable of at least

partially contributing to one or more functions of system controller 590. In this example, signal generator module 596 at least partially contributes to the conversion of command signal 508 into an actuation signal 510. Signal
5 generator 596 may comprise any hardware, software, firmware, or any combination thereof that is capable of converting command signal 508 into actuation signal 510.

In this example, system controller 590 communicates actuation signal 510 to a device control module 560
10 capable of manipulating a medical device 570. In various embodiments, the structure and function of device control module 560 can be substantially similar to the structure and function of actuation unit 20 of FIGURE 1 or base portion 410 of FIGURE 3. In various embodiments, the
15 structure and function of medical device 570 can also be substantially similar to the structure and function of medical device 10 of FIGURE 1 or medical device 400 of FIGURE 3.

In various embodiments, device control module 560
20 may be capable of generating a feedback signal 512 and communicating feedback signal 512 to system controller 590. Feedback signal 512 may comprise, for example, positioning data associated with medical device 570, a video feed, a physiological parameter associated with a
25 patient, or any other information associated with medical device 570, device control module 560, and/or a patient undergoing a medical procedure. In some embodiments, medical device 570 can communicate data 514 to system controller 590. Data 514 may comprise, for example,
30 positioning data, one or more physiological parameters associated with a patient, a live video feed associated

with a camera coupled to medical device 570, or any other data capable of being collected by medical device 570.

In various embodiments, system controller 590 may be capable of generating commands on its own based at least
5 in part on data 514 and/or feedback signal 512 communicated from medical device 570 and/or device control module 560. For example, if medical device 570 comprises a scope with blood sensors, system controller 590 may stop the movement of the scope within a patient's
10 body if data 514 is received from medical device 570 indicating that the patient is bleeding excessively.

In this example, system 500 also includes a display device 580 capable of displaying data associated with medical device 570 and/or a patient. The structure and
15 functional of display device 580 can be substantially similar to the structure and function of display device 60 or GUI 72 of FIGURE 1. Although system 500 includes a single display device in this example, any other number of display devices may be used without departing from the
20 scope of the present disclosure. In some embodiments, system controller 590 can communicate an output signal 516 containing data associated with medical device 570 and/or a patient to display device 580.

In some embodiments, system 500 may also includes an
25 audio output device 587 capable of communicating data associated with medical device 570 and/or a patient. Audio output device 587 can comprise any device capable of providing an audio output signal, such as a speaker, headphones, an audio alarm device, or any other suitable
30 audio output device. Although system 500 includes a single audio output device in this example, any other number of audio output devices may be used without

departing from the scope of the present disclosure. In some embodiments, system controller 590 may communicate an audio output signal 516 to output device 587 so that the medical professional may receive the data associated
5 with output signal 516 in audio format.

Although, in most cases, voice command 502 represents the primary control input into system 500, system 500 also includes an auxiliary input device 585 capable of generating a control signal 518. Control
10 signal 518 can comprise data that is substantially similar to data contained within control signal 506. In various embodiments, the structure and function of auxiliary input device 585 can be substantially similar to the structure and function of auxiliary input devices
15 165 or 180 of FIGURE 2. Although system 500 includes a single auxiliary input device in this example, any other number of auxiliary input devices may be used without departing from the scope of the present disclosure. In this particular embodiment, auxiliary input device 585 is
20 coupled directly to command generator 594. In some embodiments, auxiliary input device 585 may also receive data signals 520 from system controller 590. For example, in a case where auxiliary input device 585 comprises a "force-feedback" joystick, signals 520 may
25 comprise the feedback signal representing the force being exerted on medical device 570 by the patient's body.

FIGURE 5 is a flow chart illustrating an exemplary method 600 for processing a voice control signal and/or a command signal received by a medical device control
30 system. In one particular embodiment, voice control signals and/or command signals are received from system 100 of FIGURE 1. Although system 100 is used in this

example, any other system, such as systems 300 and 500 of FIGURES 2 and 4, respectively, may be used without departing from the scope of the present disclosure.

In this example, method 600 begins at step 602 where
5 communication device 50 receives a voice command from a medical professional. Communication device 50 operates to convert the voice command into voice command signal 57 and communicates voice command signal 57 to host 70. In this particular example, host 70 includes a voice
10 recognition module that processes voice command signal 57 at step 604 by converting voice command signal 57 into a control signal. In various embodiments, the structure and function of the voice recognition module can be substantially similar to voice recognition module 592 of
15 FIGURE 4. In this example, the voice recognition module further operates to identify the specific voice command represented by the control signal at step 606. In some embodiments, identifying the specific voice command may be accomplished by comparing the received control signal
20 with a list of pre-programmed commands stored in a memory device associated with host 70.

The voice recognition module validates the control signal at step 608. If the voice command is not recognized as a pre-programmed command, the invalid voice
25 command is ignored and the method loops back to step 602. If the voice command is valid, the voice recognition module communicates the control signal to a command generator. In this example, the command generator operates to convert the control signal into a command
30 signal representing the voice command at step 610. In various embodiments, the structure and function of the command generator can be substantially similar to the

structure and function of command generator module 594 of FIGURE 4.

In an alternate embodiment, auxiliary control signals capable of manipulating a medical device may be generated by an auxiliary input device at step 616. In various embodiments, the auxiliary input device may comprise, for example, auxiliary input devices 165 and/or 180 of FIGURE 2. The auxiliary input device communicates the auxiliary control signal to the command generator, which converts the auxiliary control signal into a command signal at step 610. The command generator also operates to communicate the command signal to a signal generator.

In this example, the signal generator operates to convert the command signal into an actuation signal 47 representing the voice command of the medical professional at step 612. In various embodiments, the structure and function of the signal generator can be substantially similar to the structure and function of signal generator module 596 of FIGURE 4. In this example, manipulator 40 and/or medical device 10 operates to receive and execute actuation signal 47 at step 614.

Medical devices, such as a scope, that are adapted to be inserted into the patient's body typically permit the introduction of a waveguide structure or other wired device through the patient's orifice. The waveguide structure can comprise, for example, an optical fiber, a hollow tube waveguide, an air core waveguide, a planar waveguide, or a combination of these or other devices. Examples of such additional devices include, for example, surgical knives, sample collectors, and/or cauterizing heads. In some cases, inserting a waveguide structure may enable, for example, the early detection of cancerous

cells and may contribute to the removal of the cancerous cells. In various embodiments, the waveguide structure may communicate an optical signal wavelength of 1.7 microns or more.

5 In some embodiments, a waveguide structure may be implemented in a medical device that uses an optical signal wavelength in the mid-infrared (mid-IR) wavelength range to perform surgery and/or spectroscopy on a patient. In various embodiments, a wavelength in the
10 mid-IR range comprises a wavelength between approximately two (2) microns and approximately ten (10) microns. In other embodiments, a wavelength in the mid-IR range comprises a wavelength between approximately five (5) and seven (7) microns. For light-based surgery and
15 spectroscopy, it can be particularly advantageous to use an optical signal wavelength in the range between approximately 5 microns to approximately 7 microns to minimize tissue damage or collateral damage. In a particular embodiment, an optical signal having a
20 wavelength of approximately 6.45 microns may be advantageously used for light-based surgery and/or spectroscopy.

In some embodiments, a Raman wavelength shifter coupled to a pump laser is capable of generating an
25 optical signal wavelength in the mid-IR range. As used in this document, the phrase "Raman wavelength shifter" refers to any device that uses the Raman effect to shift a shorter optical signal wavelength to a longer optical signal wavelength. The Raman wavelength shifters may
30 comprise, for example, one or more reflectors, one or more gratings, an optical fiber, or a combination of these or other elements. In various embodiments, the

Raman wavelength shifter may comprise, for example, a chalcogenide glass fiber that is capable of shifting the shorter pump laser wavelength to a longer wavelength, such as a wavelength in the mid-IR region. The
5 chalcogenide fiber may comprise, for example, a ZBLAN fiber, a sulphide fiber, a selenides fiber, or a telluride fiber, or a combination of these or other fiber types.

In other embodiments, a first wavelength shifter
10 coupled to a pump laser may be capable of shifting an optical signal wavelength to approximately 2 microns. The first wavelength shifter may comprise, for example, a fused silica optical fiber capable of shifting the shorter pump laser wavelength to approximately two (2)
15 microns. In that example, a second Raman wavelength shifter is coupled to the first Raman wavelength shifter and is capable of shifting the two (2) micron signal to a wavelength in the five (5) to seven (7) micron range. In that example, the second Raman wavelength shifter
20 comprises a chalcogenide glass fiber.

FIGURE 6A compares a surgical incision made using a 2.94 micron optical signal wavelength to a surgical incision made using a 6.45 micron optical signal wavelength. This figure illustrates that tissue damage,
25 such as denatured tissue, can result when a medical device implements a 2.94 micron optical signal wavelength. This tissue damage tends to result from the protein temperatures in the tissue do not uniformly exceed the water temperature in the aqueous components of
30 the tissue.

Compared to the incision performed using the 2.94 micron optical signal wavelength, the incision made using

the 6.45 micron optical signal has little or no denatured tissue. This reduction in collateral tissue damage is based at least in part on the tissue's ability to absorb differential energy. For example, when using an optical
5 signal wavelength at approximately 6.45 microns to create an incision, the protein temperatures in the tissue uniformly exceed the water temperature in the tissue and the protein begins to transform into brittle denatured protein. The brittle fracture of the proteins at the
10 onset of explosive vaporization leads to the confinement of collateral damage. Therefore, the use of a 6.45 micron optical signal wavelength as a tissue cutting implement may minimize collateral tissue damage during laser-based surgery. By using an optical signal
15 wavelength of 6.45 microns with a medical scope-type device, "clean" surgery may be performed for many medical procedures, such as removing cancerous polyps. Similar results can be obtained using an optical signal wavelength in the five (5) to seven (7) micron range.

20 FIGURE 6B illustrates example evanescent spectra in different cell-type regions (using a mouse as the biological sample). This figure illustrates that cancerous cells tend to show a distinct reduction 700 in transmission at an optical signal wavelength of
25 approximately 6.1 microns. Medical professionals can exploit this spectral signature in various medical procedures, such as a procedure for the early detection of cancer. Thus, an optical signal wavelength in the mid-IR range may be used to perform a medical procedure
30 for the early detection of tissue abnormalities such as cancer cells. In other embodiments, an optical signal wavelength in the mid-IR range can be used in a

diagnostic procedure, such as spectroscopy. Diagnostic techniques capable of using the mid-IR optical signal wavelength include, for example, transmission, reflection, fluorescence, and near field microscopy.

5 Although specific examples of spectroscopy are discussed, any other appropriate form of spectroscopy may be used without departing from the scope of this disclosure.

To improve the signal-to-noise ratio of a spectroscopic measurement such as in FIGURE 6B, several
10 methodologies may be used. First, a differential measurement may be taken between a known cancer-free area and the suspect area, for example, differential spectroscopy rather than absolute spectroscopy. In addition, measurements may be taken at several
15 wavelengths and compared to each other. For example, measuring the differential transmission of the tissue at two or more wavelengths, such as 5 microns and 6.1 microns, may improve the signal-to-noise ratio of the cancer cell signature.

20 FIGURE 7 illustrates example attenuation characteristics of several optical fibers based on wavelength. This example shows that fused silica (SiO_2) fibers become lossy above approximately 2 microns in wavelength, while mid-IR optical fibers remain relatively
25 loss-less above 2 microns. A mid-IR fiber may comprise any optical fiber capable of at least partially transmitting for at least a portion of the mid-IR range. For example, a mid-IR fiber may comprise a chalcogenide fiber, such as a Sulfide fiber, a Selenide fiber, or a
30 Telluride fiber. Therefore, in some cases, a pump source coupled to a medical device, such as medical device 400 of FIGURE 3, may comprise a high powered pump source

coupled to a Raman wavelength shifter comprising a mid-IR fiber. In a particular embodiment, such a pump source may operate in a pulsed mode or in a continuous wave mode. The power levels required depend on the particular application. For example, spectroscopy may require a
5 relatively low power level, while surgery may require a relatively high power level.

Conventional surgical devices capable of using a 5.0 to 6.5 micron optical signal wavelength typically
10 implement a Free Electron Laser (FEL) pump source. However, a FEL pump source is a large and very expensive facility that tends to be impractical for surgical applications. Unlike conventional surgical devices, a medical device, such as device 400 of FIGURE 3, can
15 include a pump laser coupled to one or more Raman wavelength shifters capable of shifting a shorter signal wavelength to a longer signal wavelength. In that example, at least a portion of the Raman wavelength shifter can be implemented in a waveguide structure. In
20 various embodiments, the longer signal wavelength can comprise, for example, an optical signal wavelength in the mid-IR wavelength range. Coupling a pump laser to one or more Raman wavelength shifters can result in a commercially and economically viable optical cutting
25 implement for use in a medical device. In addition, coupling a pump laser to one or more Raman wavelength shifters can result in a significantly smaller footprint area than a FEL pump source and can significantly reduce the cost.

30 Conventional wavelength shifters or oscillators are typically implemented in fused silica fiber. The loss associated with fused silica fiber tends to increase

rapidly for optical signal wavelengths greater than about 2 or 2.3 microns. Unlike conventional wavelength shifters, a medical device, such as device 400 of FIGURE 3, can include a Raman wavelength shifter or oscillator
5 that is capable of transmitting in the mid-IR wavelength range, such as chalcogenide optical fibers.

FIGURES 8A through 8D are block diagrams illustrating example embodiments of Raman wavelength shifters and/or Raman oscillators capable of shifting a
10 shorter pump signal wavelength to a longer output signal wavelength. Although particular examples of wavelength shifters are described in FIGURES 8A through 8D, any other Raman wavelength shifter can be implemented without departing from the scope of the present disclosure.

15 FIGURE 8A is a block diagram illustrating one example of a Raman wavelength shifter 800 capable of shifting a shorter pump signal 810 wavelength to a longer output signal wavelength 812. In this example, Raman wavelength shifter 800 operates to generate an optical
20 signal wavelength 812 of 1.7 microns or more. In various embodiments, Raman wavelength shifter 800 can operate to generate an optical signal wavelength 812 in the mid-IR wavelength range. In other embodiments, Raman wavelength shifter 800 can operate to generate an optical signal
25 wavelength 812 a wavelength in the five (5) to seven (7) micron range. In various embodiments, pump signal 810 can comprise, for example, a 1310 nanometer (nm) wavelength, 1390 nm wavelength, 1510 nm wavelength, or other optical signal wavelength.

30 Raman wavelength shifter includes a gain fiber 804 operable to facilitate shifting pump signal 810 to a desired wavelength. Gain fiber 804 may comprise any

waveguide structure capable of wavelength shifting pump signal 810 to a longer wavelength or a different Raman cascade order. In this particular embodiment, gain fiber 804 comprises an optical fiber. The optical fiber used
5 as gain fiber 804 may comprise, for example, a dispersion compensating fiber, a dispersion shifter fiber, a single mode fiber, a chalcogenide fiber, a fused silica optical fiber, or a combination of these or other fiber types. Raman wavelength shifter 800 also includes a broadband
10 reflector 802 operable to substantially reflect all optical signal wavelengths contained within Raman wavelength shifter 800 and a pump signal coupler 806. Reflector 802 may comprise any device capable of reflecting a wide range of wavelength signals, such as a
15 mirror. Pump signal coupler 806 may comprise any device capable of coupling pump signal 810 to Raman wavelength shifter 800, such as a wavelength division multiplexer or a power coupler.

In this example, Raman wavelength shifter 800
20 further includes a wavelength separator 808 capable of transmitting at least a portion of the desired wavelength from Raman wavelength shifter 800. In addition, wavelength separator 808 operates to at least partially reflect a desired wavelength to gain medium 804 to
25 continue lasing at the desired wavelength or wavelengths. In this particular embodiment, a cavity is formed between reflector 802 and wavelength separator 808. Separator 808 could comprise, for example, a demultiplexer, one or more partially transmissive gratings, one or more
30 partially transmitting mirrors, one or more Fabry Perot filters, one or more dielectric gratings, or any combination of these or other devices.

FIGURE 8B is a block diagram illustrating one example of a Raman wavelength shifter 820 capable of shifting a shorter pump signal 830 wavelength to a longer output signal wavelength 832. In this example, Raman wavelength shifter 820 operates to generate an optical signal wavelength 832 of 1.7 microns or more. In various embodiments, Raman wavelength shifter 820 operates to generate an optical signal wavelength 832 in the mid-IR wavelength range. In other embodiments, Raman wavelength shifter 820 operates to generate an optical signal wavelength 832 a wavelength in the five (5) to seven (7) micron range. In various embodiments, pump signal 830 can comprise, for example, a 1310 nanometer (nm) wavelength, 1390 nm wavelength, 1510 nm wavelength, or other optical signal wavelength.

In this example, Raman wavelength shifter 820 includes a reflector 822, a gain fiber 824, a pump input coupler 826, and a wavelength separator 828. In various embodiments, the structure and function of reflector 822, gain fiber 824, coupler 826, and separator 828 can be substantially similar to reflector 802, gain fiber 804, coupler 806, and separator 808 of FIGURE 8A, respectively. In this particular embodiment, at least a portion of gain fiber 824 can comprise a chalcogenide fiber.

Raman wavelength shifter 820 may also include at least a first selecting element 825a and a second selecting element 825b. Although this example may also include two selecting elements 825a and 825b, any number of selecting elements can be used without departing from the scope of the present disclosure. Selecting elements 825a and 825b can comprise any device, such as a

dielectric grating or one or more Fabry Perot filters. Each selecting element operates to transmit a portion of a desired wavelength to be output from Raman wavelength shifter 820. In addition, each selecting element 825a
5 and 825b operates to at least partially reflect a desired wavelength to gain medium 824 to allow wavelength shifter 820 to continue lasing at the desired wavelength or wavelengths. In this particular embodiment, an optical cavity is formed between reflector 822 and selecting
10 element 825a and/or selecting element 825b.

FIGURE 8C is a block diagram illustrating one example of a Raman wavelength shifter 840 capable of shifting a shorter pump signal 850 wavelength to a longer output signal wavelength 852. In this example, Raman
15 wavelength shifter 840 operates to generate an optical signal wavelength 852 of 1.7 microns or more. In various embodiments, Raman wavelength shifter 840 operates to generate an optical signal wavelength 852 in the mid-IR wavelength range. In other embodiments, Raman wavelength
20 shifter 840 operates to generate an optical signal wavelength 852 a wavelength in the five (5) to seven (7) micron range. In various embodiments, pump signal 850 can comprise, for example, a 980 nanometer (nm) wavelength, a 1060 nm wavelength, a 1310 nm wavelength, a
25 1390 nm wavelength, a 1510 nm wavelength, or other optical signal wavelength.

In this example, Raman wavelength shifter 840 includes a gain fiber 844, a pump input coupler 846, and selecting elements 845. In various embodiments, the
30 structure and function of gain fiber 844, coupler 826, selecting elements 845, and output coupler 848 can be substantially similar to gain fiber 824, coupler 826,

selecting elements 825, and coupler 828 of FIGURE 8B, respectively. In this particular embodiment, at least a portion of gain fiber 824 can comprise a chalcogenide fiber.

5 The example illustrated in FIGURE 8C differs from the example illustrated in FIGURE 8B in that wavelength shifter 840 implements a plurality of reflective gratings 847a-847n each centered on a different wavelength of a reflection band. Although this example includes three
10 gratings, any number of gratings can be used without departing from the scope of the present disclosure. Gratings 847a-847n can comprise any device, such as a high-reflectivity dielectric grating. In this particular example, each grating 847a-847n comprises a grating with
15 a reflectivity between ninety-five (95) to one hundred (100) percent at the center wavelength. Gratings 847a-847n operate to facilitate cascading of pump signal 850 to a desired output wavelength. In this particular embodiment, an optical cavity is formed between selecting
20 elements 845 are gratings 847.

FIGURE 8D is a block diagram illustrating one example of a Raman wavelength shifter 860 capable of shifting a shorter pump signal 870 wavelength to a longer output signal wavelength 832. In this example, Raman
25 wavelength shifter 860 operates to generate an optical signal wavelength 872 of 1.7 microns or more. In various embodiments, Raman wavelength shifter 860 operates to generate an optical signal wavelength 872 in the mid-IR wavelength range. In other embodiments, Raman wavelength
30 shifter 860 operates to generate an optical signal wavelength 872 a wavelength in the five (5) to seven (7) micron range. In various embodiments, pump signal 870

can comprise, for example, a 980 nm wavelength, a 1060 nm wavelength, a 1310 nm wavelength, a 1390 nm wavelength, a 1510 nm wavelength, or other optical signal wavelength.

5 In this example, Raman wavelength shifter 860 includes a gain fiber 864, a pump input coupler 866, selecting elements 864, reflective gratings 867, and an output coupler 868. In various embodiments, the structure and function of gain fiber 864, input coupler
10 866, elements 864, gratings 867, and output coupler 868 can be substantially similar to gain fiber 844, coupler 846, elements 845, gratings 847, and coupler 848 of FIGURE 8C, respectively. Although example elements are illustrated, Raman wavelength shifter 860 may include
15 some, none, or all of these elements. For example, in some embodiments, pump input coupler 866 and/or output coupler 868 may be optional.

The example illustrated in FIGURE 8D differs from the example illustrated in FIGURE 8C in that wavelength
20 shifter 860 implements a Q-switcher 863 capable of transitioning from a reflective state to a transmissive state. Q-switcher 863 can comprise a device or combination of devices having a variable loss. For example, Q-switcher may comprise one or more moving
25 mirrors, electro-optic switches, saturable absorbers, or a combination of these or other optical devices. In some cases, Q-switcher 863 can initially operate as a reflective mirror so that optical signal energy may build-up within the laser cavity. After the laser cavity
30 contains a sufficient amount of optical energy, Q-switcher 863 can operate to substantially transmit the desired optical signal wavelength in the form of a

relatively large pulse or burst. In various embodiments, Q-switcher 863 may be capable of providing an output signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds. In other
5 embodiments, Q-switcher 863 may be capable of providing an output signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

FIGURES 9A through 9C are block diagrams illustrating example embodiments of pump sources that are
10 capable of generating a pump signal for use in a Raman wavelength shifter. Although particular examples of pump sources are described in FIGURES 9A through 9C, any other pump source can be implemented without departing from the scope of the present disclosure.

15 FIGURE 9A is a block diagram illustrating one example embodiment of a pump source 900 capable of being coupled to a Raman wavelength shifter and/or a Raman oscillator. Pump source 900 can comprise any device capable of generating an optical signal at a desired
20 wavelength and power. For example, pump source 900 can comprise a solid state laser, such a Nd:YAG or Nd:YLF laser, a semiconductor laser, a laser diode, a cladding pump fiber laser, or any combination of these or other light sources. In this example, pump source 900
25 comprises a high powered laser 902 coupled to a Raman oscillator or a Raman wavelength shifter, such as Raman wavelength shifters 800, 820, 840, or 860 of FIGURES 8A through 8D.

FIGURE 9B is a block diagram illustrating one
30 example embodiment of a pump source 920 capable of being coupled to a Raman wavelength shifter and/or a Raman oscillator. In this example, pump source 920 includes a

pump laser 922 and an intermediate stage 924 capable of shifting the optical signal wavelength generated by pump laser 922 to a longer wavelength. The structure and function of laser 922 may be substantially similar to the structure and function of pump source 900 of FIGURE 9A. In this particular example, intermediate state 924 comprises a first Raman wavelength shifter 924. In some embodiments, intermediate wavelength shifter 924 may advantageously be implemented using fused silica optical fiber.

In some embodiments, pump sources 900 and 920 may comprise a cladding-pumped fiber laser, capable of emitting a pump signal wavelength of approximately 1 micron. In those examples, pump sources 900 and 920 can be coupled to a first or auxiliary cascaded Raman oscillator or Raman wavelength shifter. In some cases, the auxiliary Raman oscillator or Raman wavelength shifter may comprise, for example, Raman wavelength shifters 800, 820, 840, or 860 of FIGURES 8A through 8D implementing a fused silica optical fiber. Such an arrangement may be used to shift the 1 micron optical signal to approximately 2 to 2.3 microns. The 2-2.3 micron signal output from the auxiliary Raman wavelength shifter can then be shifted to a mid-IR wavelength by another cascaded Raman oscillator or Raman wavelength shifter that implements in mid-IR fiber.

FIGURE 9C is a block diagram illustrating one example embodiment of a pump source 940 capable of being coupled to a Raman wavelength shifter and/or a Raman oscillator. In this example, pump source 940 includes a pump laser 942 and a multiplexer 944 capable of combining a plurality of pump signals into a pump output signal.

In this particular example, pump source 900 comprises a first laser diode 942a and a second laser diode 942b each centered at a desired wavelength and capable of generating pump signals 943a and 943b. Although this
5 example includes two laser diodes, any number of laser diodes may be used without departing from the scope of the present disclosure. In various embodiments, laser diodes 942a and 942b can be centered on substantially the same wavelength, such as 980 nm, 1310 nm, 1390 nm, 14xx
10 nm, or 1510 nm. In this particular, pump signals 943a and 943b are combined by multiplexer 944. Multiplexer 944 can comprise any device capable of combining pump signals 943, such as a wavelength division multiplexer. In various embodiments, multiplexer 944 can be capable of
15 polarization and/or wavelength multiplexing pump signals 943a and 943b to form a pump output signal.

In some embodiments, a Raman wavelength shifter, such as those illustrated in FIGURES 8A through 8D, may be used to deliver an optical signal wavelength directly
20 to the patient. In other embodiments, a second mid-IR waveguide structure, that at least partially transmits in at least a portion of the mid-IR wavelength range, may be coupled to the output of the Raman wavelength shifter to deliver the optical signal wavelength to the patient.
25 Coupling a second mid-IR waveguide structure to the Raman wavelength shifter can advantageously allow the delivery waveguide structure to be disposed after use within the patient. In addition, coupling a second mid-IR waveguide structure can substantially reduce the chance of breaking
30 a fiber associated with a Raman wavelength shifter. Furthermore, it may be desirable to couple a tapered end

or lens on the delivery fiber for improved focusing of optical signal on the patient.

In various embodiments, an optical signal wavelength is capable of being delivered to a medical device
5 inserted into a patient using a waveguide structure having a relatively low coupling loss. In some cases, the waveguide structure maintain the coupling loss to, for example, 5 dB or less, 3 dB or less, or even less than 1 dB.

10 Although the present invention has been described with several embodiments, a multitude of changes, substitutions, variations, alterations, and modifications may be suggested to one skilled in the art, and it is intended that the invention encompass all such changes,
15 substitutions, variations, alterations, and modifications as fall within the spirit and scope of the appended claims.

WHAT IS CLAIMED IS:

1. A mid-infrared light source, comprising:

a combiner coupled to at least a first pump laser and a second pump laser, the combiner operable to couple
5 a first optical signal generated by the first pump laser and a second optical signal generated by the second pump laser to a gain fiber, the gain fiber comprising a first waveguide structure; and

a Raman wavelength shifter coupled to the gain
10 fiber, at least a portion of the Raman wavelength shifter comprising a second waveguide structure capable of wavelength shifting at least one wavelength of the first optical signal to a longer signal wavelength.

15 2. The mid-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

20 3. The mid-infrared light source of Claim 1, wherein the first pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.

25 4. The mid-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

30 5. The mid-infrared light source of Claim 1, wherein the second pump laser is selected from the group consisting of a solid state laser, a Nd:YAG laser, a

Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pump fiber laser.

6. The mid-infrared light source of Claim 1,
5 wherein the second pump laser comprises a plurality of laser diodes capable of generating a plurality of pump signals substantially centered on a selected wavelength.

7. The mid-infrared light source of Claim 6,
10 wherein the second pump laser further comprises a multiplexer capable of combining the plurality of pump signals into the second optical signal.

8. The mid-infrared light source of Claim 7,
15 wherein the multiplexer is selected from the group consisting of a wavelength division multiplexer, a polarization multiplexer, and a power combiner.

9. The mid-infrared light source of Claim 1,
20 wherein the second optical signal comprises a selected wavelength selected from the group consisting of 980 nm, 1310 nm, 1390 nm, 1400-1499 nm, and 1510 nm.

10. The mid-infrared light source of Claim 1,
25 wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

30 11. The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a

pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

12. The mid-infrared light source of Claim 1,
5 wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

13. The mid-infrared light source of Claim 1,
10 wherein the combiner is selected from the group consisting of a wavelength division multiplexer and a power coupler.

14. The mid-infrared light source of Claim 1,
15 wherein the gain fiber is selected from the group consisting of a dispersion compensating fiber, a dispersion shifted fiber, a single mode fiber, a chalcogenide fiber, and a fused silica optical fiber.

20 15. The mid-infrared light source of Claim 1, wherein at least a portion of the first waveguide structure is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

25

16. The mid-infrared light source of Claim 1,
wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased
30 optical signal energy is communicated from the first waveguide structure at a selected wavelength.

17. The mid-infrared light source of Claim 1,
wherein at least a portion of the second waveguide
structure is selected from the group consisting of an
optical fiber, a hollow tube waveguide, an air core
5 waveguide, and a planar waveguide.

18. The mid-infrared light source of Claim 1,
wherein at least a portion of the second waveguide
structure comprises an optical fiber.
10

19. The mid-infrared light source of Claim 18,
wherein the optical fiber comprises a mid-infrared
optical fiber.

20. The mid-infrared light source of Claim 18,
wherein the optical fiber is selected from the group
consisting of a chalcogenide fiber and a ZBLAN fiber.
15

21. The mid-infrared light source of Claim 1,
20 wherein at least a portion of the second waveguide
structure is selected from the group consisting of a
ZBLAN waveguide, a sulfide waveguide, a selenide
waveguide, and a telluride waveguide.

22. The mid-infrared light source of Claim 1,
25 wherein at least a portion of the second waveguide
structure comprises a single mode optical fiber.

23. The mid-infrared light source of Claim 1,
30 wherein the longer optical signal wavelength comprises a
wavelength of approximately 1.7 microns or more.

24. The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

5

25. The mid-infrared light source of Claim 1, wherein the longer optical signal wavelength comprises a wavelength in the range of five (5) microns to seven (7) microns.

10

26. The mid-infrared light source of Claim 1, further comprising a wavelength separator coupled to the Raman wavelength shifter and capable of transmitting at least a portion of a selected wavelength from the Raman wavelength shifter.

15

27. The mid-infrared light source of Claim 26, wherein the wavelength separator is selected from the group consisting of a demultiplexer, one or more partially transmissive gratings, one or more partially transmitting mirrors, one or more Fabry Perot filters and one or more dielectric gratings.

20

28. The mid-infrared light source of Claim 1, further comprising at least a third waveguide structure coupled to the Raman wavelength shifter, wherein the third waveguide structure comprises a coupling loss of no more than five (5) decibels.

25

29. A method of shifting an optical signal wavelength to a longer optical signal wavelength, comprising:

coupling a first optical signal generated by a first
5 pump laser and a second optical signal generated by a
second pump laser to a gain fiber, the gain fiber
comprising a first waveguide structure; and

shifting at least one wavelength of the first
optical signal to a longer signal wavelength using a
10 second waveguide structure coupled to the gain fiber.

30. The method of Claim 29, wherein the second pump
laser comprises a plurality of laser diodes capable of
generating a plurality of pump signals substantially
15 centered on a selected wavelength.

31. The method of Claim 30, wherein the second pump
laser further comprises a multiplexer capable of
combining the plurality of pump signals into the second
20 optical signal.

32. The method of Claim 29, wherein the second
optical signal comprises a selected wavelength selected
from the group consisting of 980 nm, 1310 nm, 1390 nm,
25 1400-1499 nm and 1510 nm.

33. The method of Claim 29, wherein the longer
optical signal wavelength comprises a pulsed optical
signal having a pulse repetition rate in the range of two
30 (2) hertz to one hundred (100) megahertz.

34. The method of Claim 29, wherein the longer optical signal wavelength comprises a pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

5

35. The method of Claim 29, wherein a variation of the wavelength of the first optical signal causes a variation in wavelength of the longer optical signal.

10

36. The method of Claim 29, wherein the first waveguide structure at least partially contributes to increasing an optical energy of at least the first optical signal and wherein the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

15

37. The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength of approximately 1.7 microns or more.

20

38. The method of Claim 29, wherein the longer optical signal wavelength comprises a wavelength in the range of two (2) microns to ten (10) microns.

25

39. The method of Claim 29, further comprising transmitting at least a portion of a selected wavelength from the Raman wavelength shifter into a third waveguide structure.

40. A mid-infrared light source, comprising:

a gain fiber operable to receive at least a first optical signal comprising one or more wavelengths, the gain fiber comprising a first waveguide structure; and

5 a second waveguide structure coupled to the gain fiber and operable to wavelength shift at least one wavelength of the first optical signal to a longer wavelength optical signal, the longer wavelength optical signal comprising a wavelength in the range of two (2)
10 microns to ten (10) microns.

41. The mid-infrared light source of Claim 40, wherein at least one wavelength of the first optical signal is selected from the group consisting of 980 nm,
15 1310 nm, 1390 nm, 1400-1499 nm and 1510 nm.

42. The mid-infrared light source of Claim 40, wherein the longer wavelength optical signal comprises a pulsed optical signal having a pulse repetition rate in
20 the range of two (2) hertz to one hundred (100) megahertz.

43. The mid-infrared light source of Claim 40, wherein the longer wavelength optical signal comprises a
25 pulsed optical signal having a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

44. The mid-infrared light source of Claim 40, wherein the first waveguide structure at least partially
30 contributes to increasing an optical energy of at least one wavelength of the first optical signal and wherein

the increased optical signal energy is communicated from the first waveguide structure at a selected wavelength.

45. The mid-infrared light source of Claim 40,
5 wherein the longer wavelength optical signal comprises a wavelength in the range of five (5) microns to seven (7) microns.

SYSTEM AND METHOD FOR VOICE CONTROL OF
MEDICAL DEVICES

ABSTRACT

A medical device includes an insertable portion capable of being inserted into an orifice associated with a body of a patient. The insertable portion comprising
5 an automated head unit capable of being manipulated in at least two axes of motion based at least in part on one or more control signals. The medical device further includes one or more controllers coupled to the automated head unit. In one particular embodiment, the one or more
10 controllers generate the one or more control signals based at least in part on an input signal.

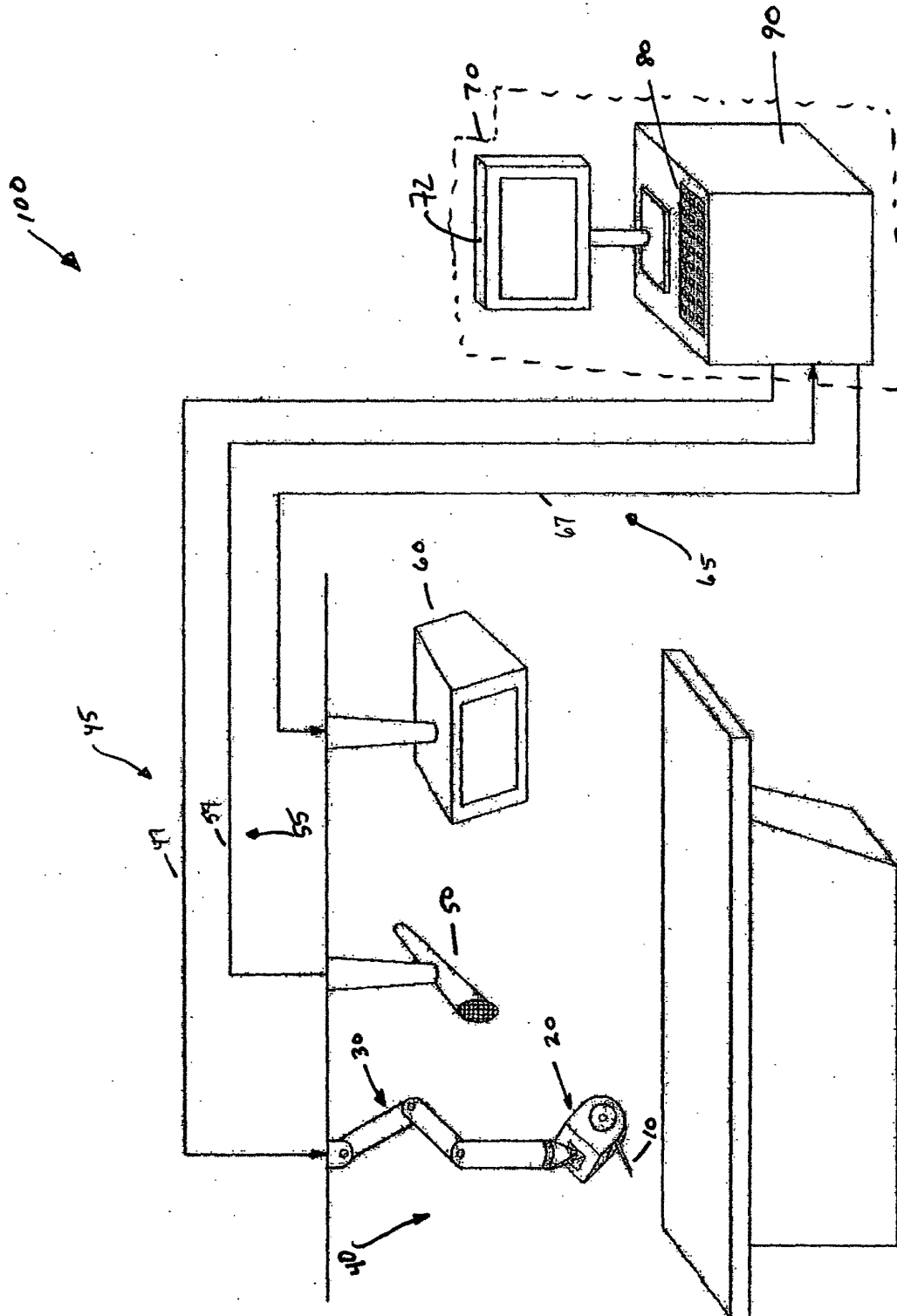


Figure 1

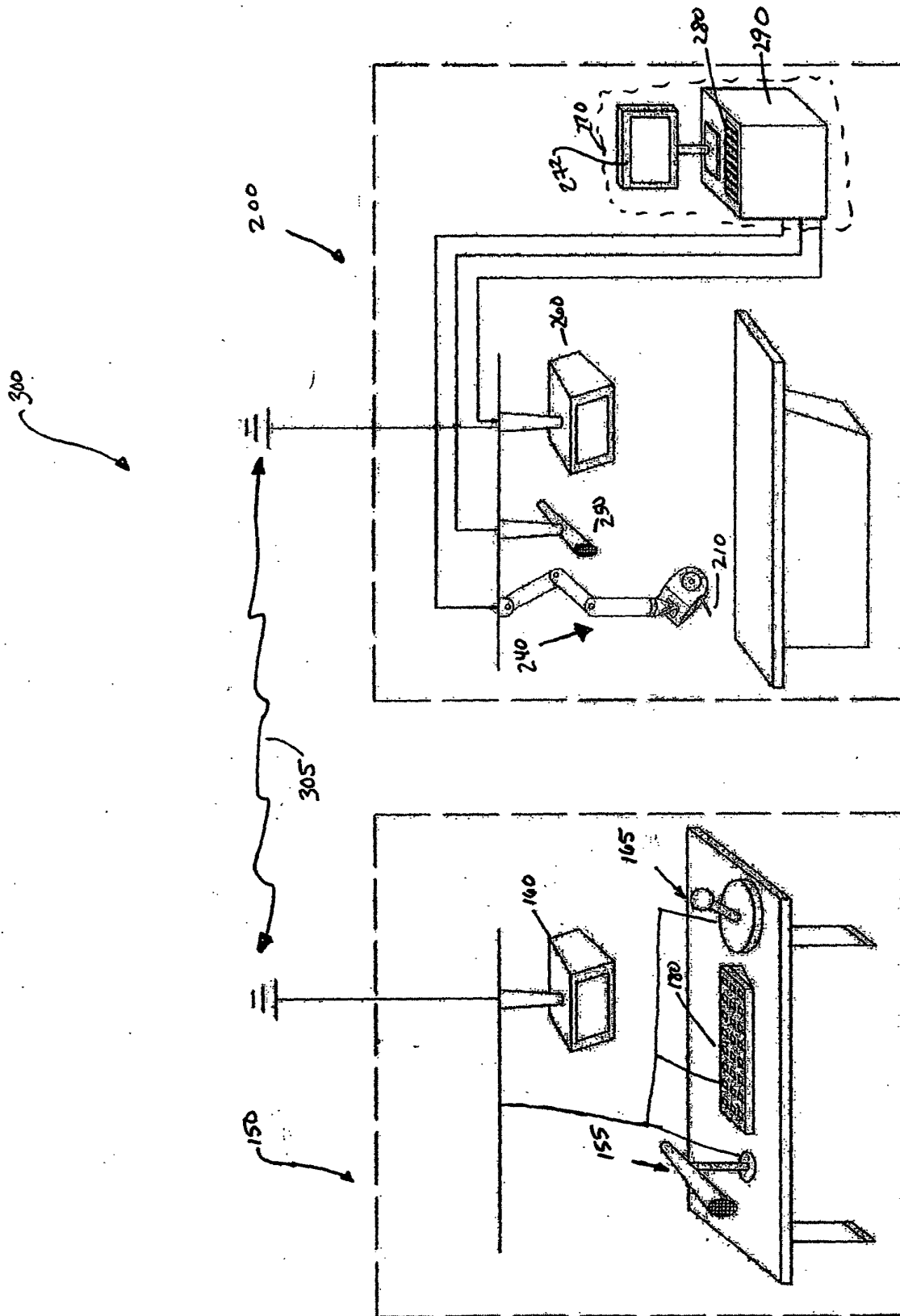


Figure 2

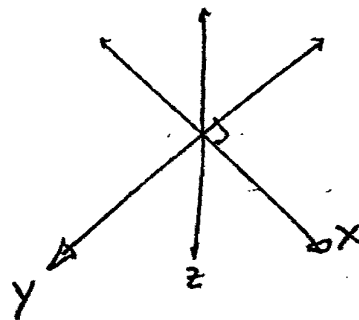
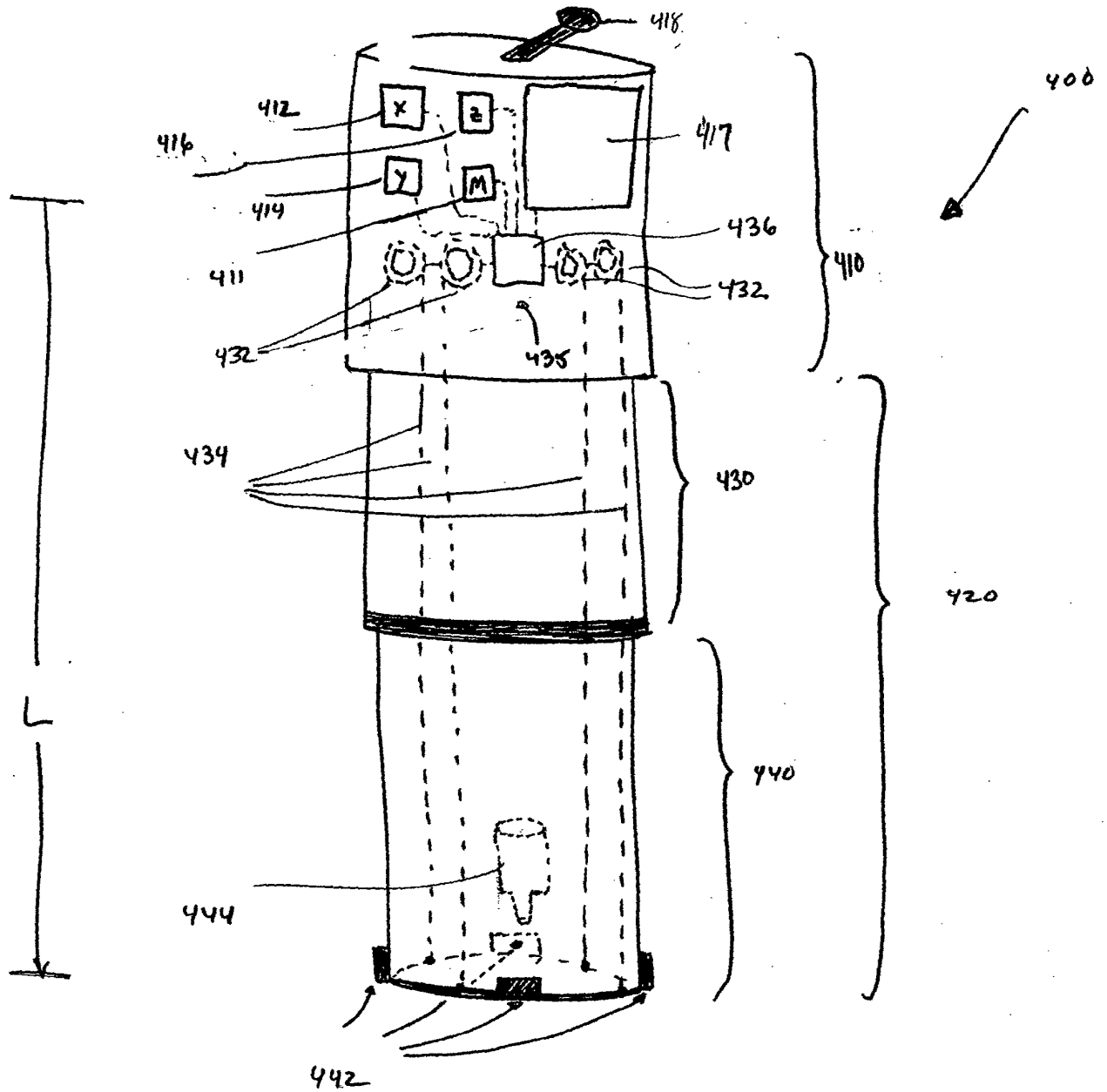


FIGURE 3

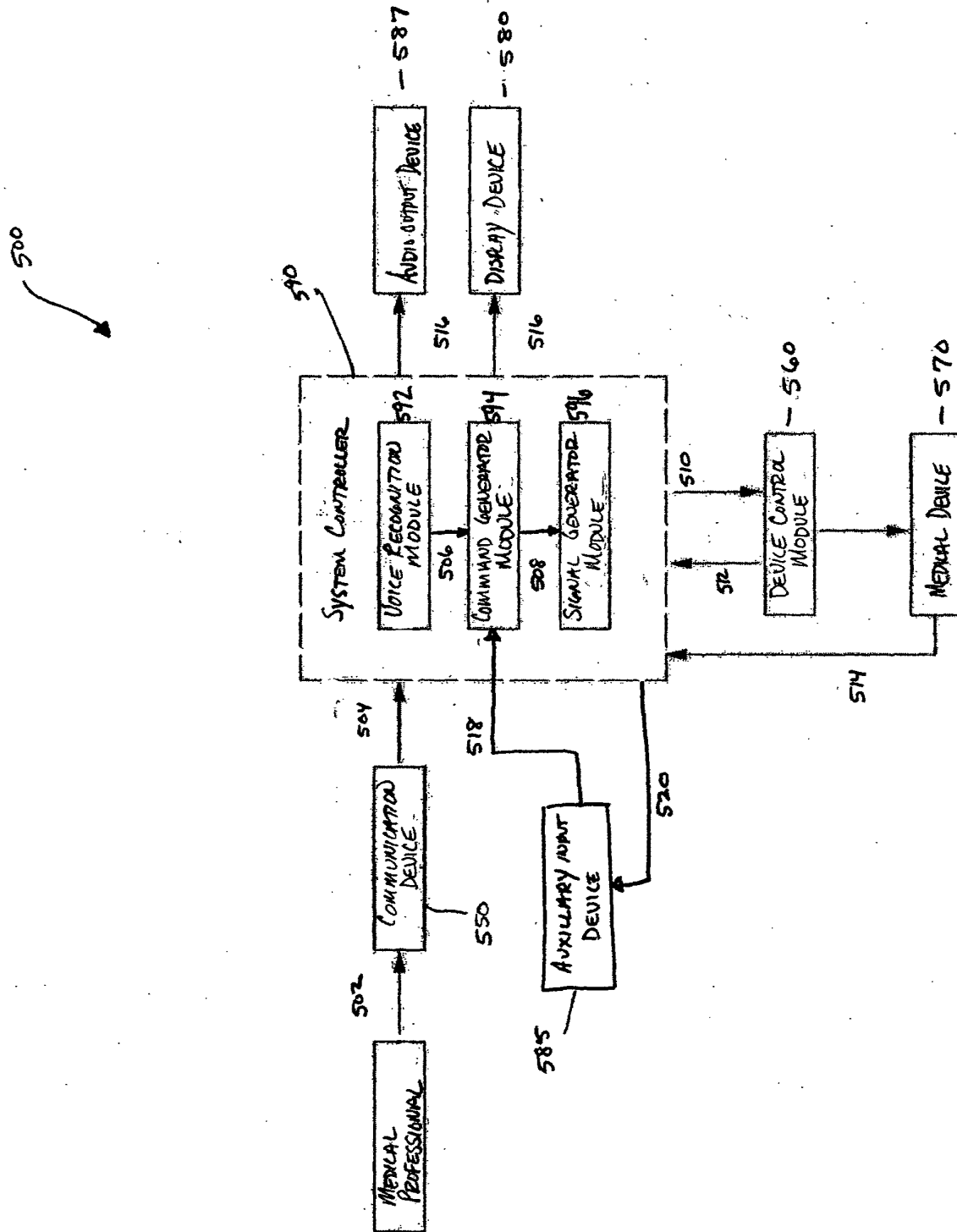


FIGURE 4

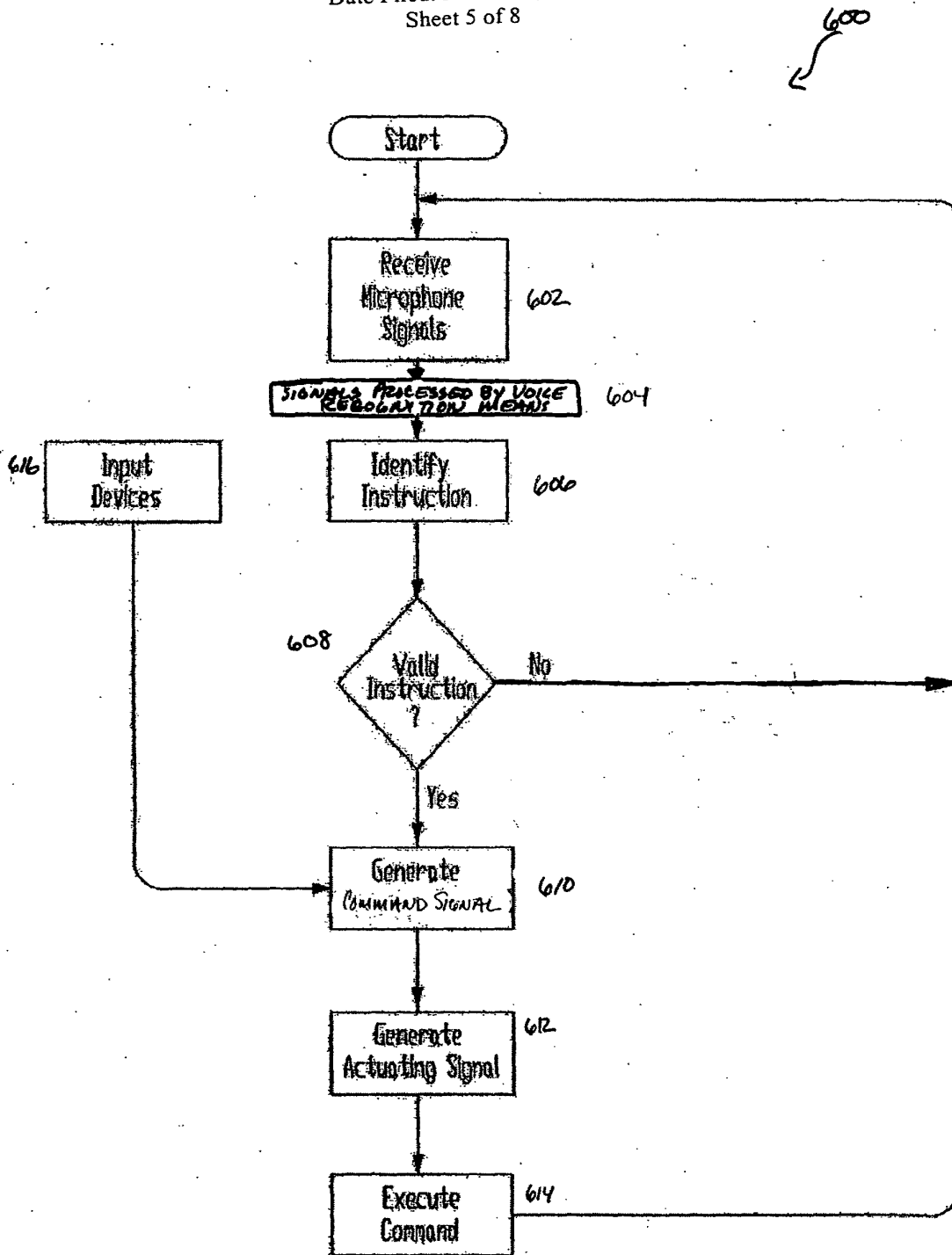


FIGURE 5

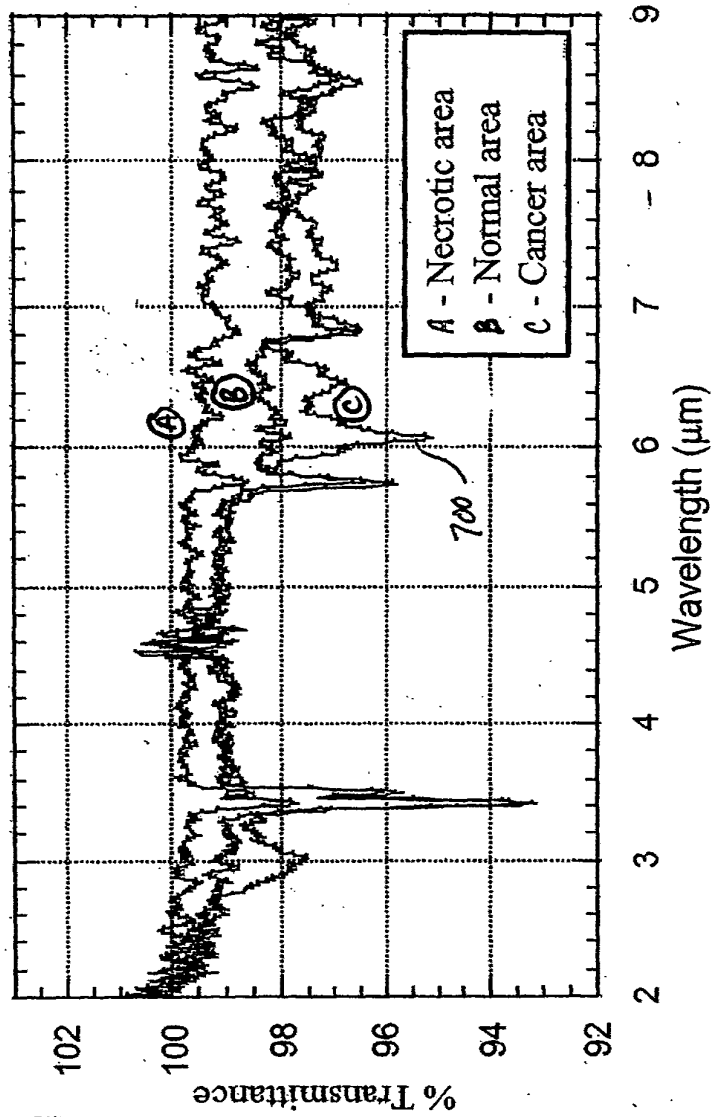


FIGURE 6B

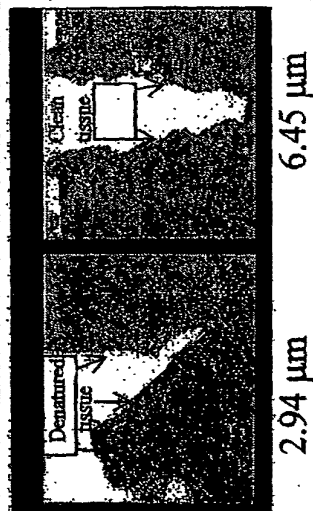


FIGURE 6A

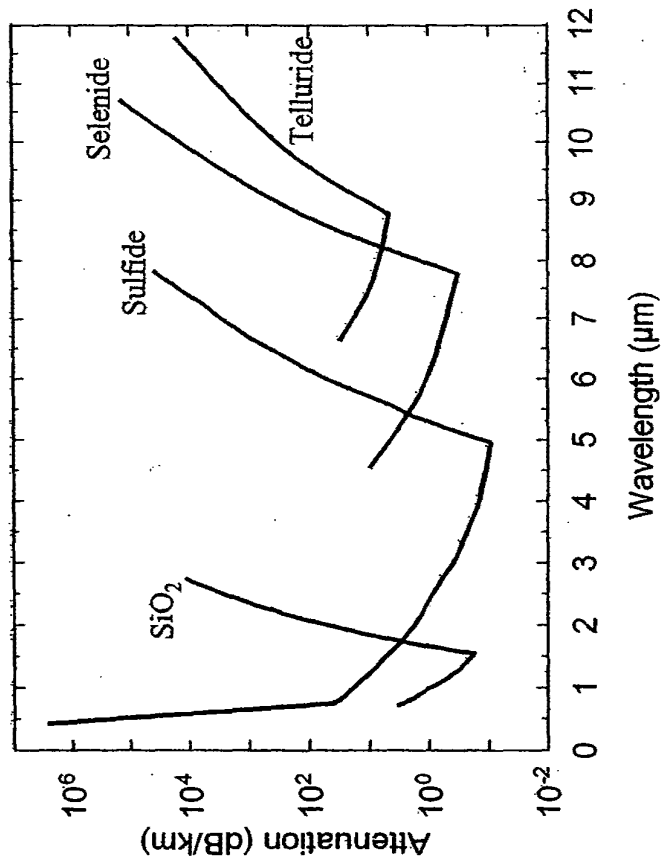


FIGURE 7

FIGURE 8A

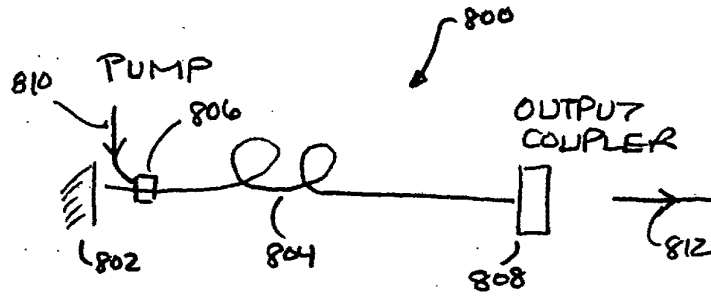


FIGURE 8B

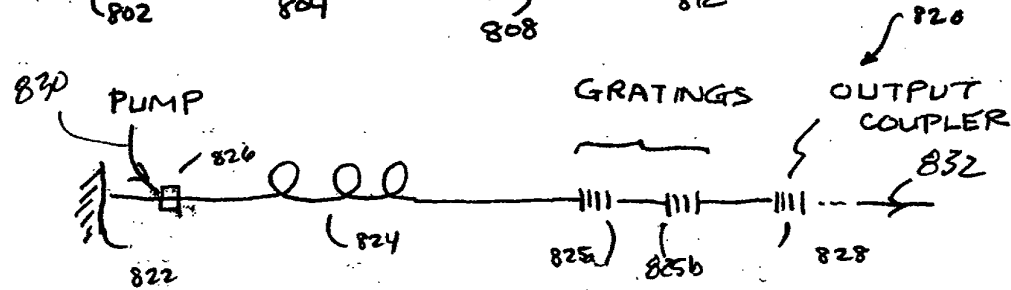


FIGURE 8C

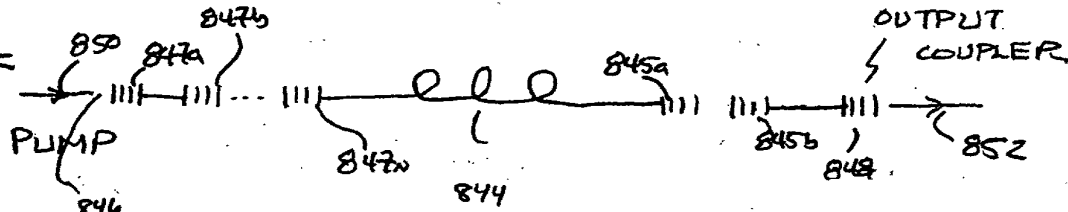


FIGURE 8D

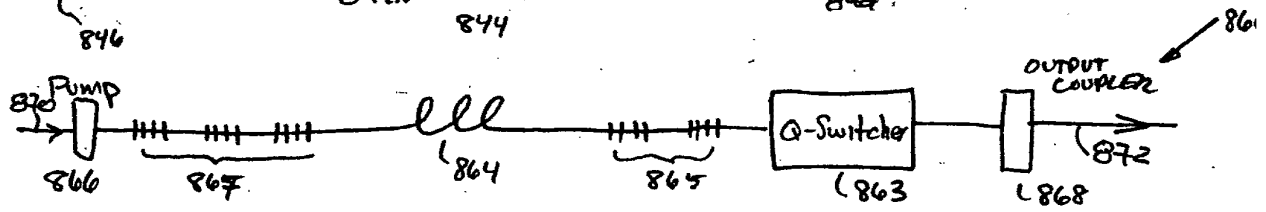


FIGURE 9A

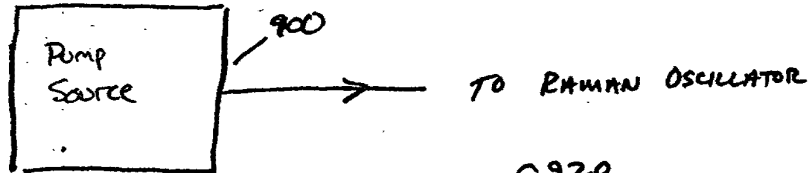


FIGURE 9B

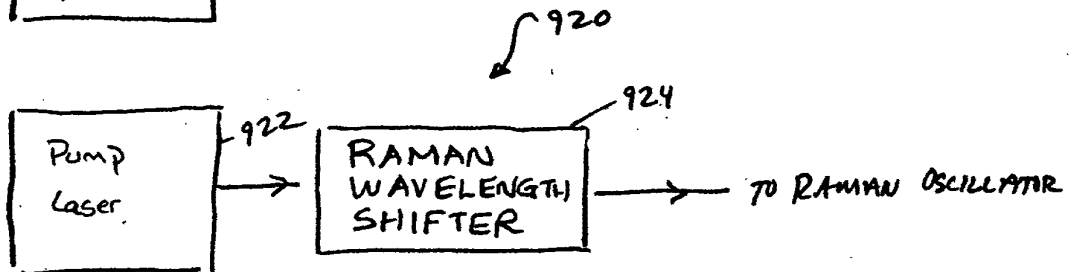
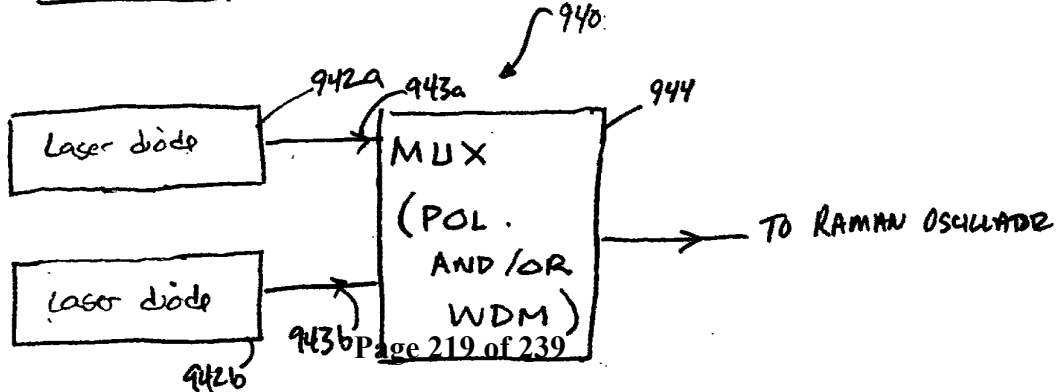


FIGURE 9C



DECLARATION AND POWER OF ATTORNEY

As a below named inventor(s), I declare that:

My residence, post office address and citizenship are as stated below next to my name, that I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention or design entitled SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES, the specification of which (check one):

 X is attached hereto; or

 was filed on as Application Serial
No. and was amended on (if applicable);

that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above; and that I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to us to be material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Application
Serial Number
None

Date

Status

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Application
Serial Number
60/408,025

Filing Date
September 3, 2002

ATTORNEY DOCKET NO.
074036.0129

DECLARATION AND
POWER OF ATTORNEY

I hereby appoint:

Practitioners at Customer Number:

05073

all of the firm of Baker Botts L.L.P., my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities.

Send Correspondence To:
Baker Botts L.L.P.
2001 Ross Avenue
Dallas, Texas 75201-2980

Direct Telephone Calls To:
Douglas M. Kubehl
at (214) 953-6486
Atty. Docket No. 074036.0129

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of inventor:

MOHAMMED N. ISLAM

Inventor's signature



Date

8/28/03

Residence (City, County, State)

Ann Arbor, Washtenaw County, Michigan

Citizenship

United States of America

Post Office Address

647 Spring Valley Drive
Barton Hills Village
Ann Arbor, Michigan 48105

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Mohammed N. Islam

Date Filed: March 30, 2004

Title: SYSTEM AND METHOD FOR VOICE CONTROL OF
MEDICAL DEVICES

MAIL STOP PATENT APPLICATION

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313.1450

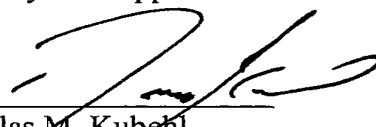
Dear Sir:

INFORMATION DISCLOSURE STATEMENT

Applicant respectfully requests, pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form, and previously cited in U.S. Application Serial No. 10/652,276, filed August 29, 2003 by Applicant and entitled "SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES," be considered and cited in the examination of the above-identified continuation patent application. Pursuant to 37 C.F.R. § 1.98(d), copies of these references are not being furnished. Furthermore, pursuant to 37 C.F.R. § 1.97(h), no representation is made that these references qualify as prior art or that these references are material to the patentability of the present application.

Pursuant to 37 C.F.R. § 1.97(b), no fee is believed due. If, however, Applicant has overlooked the need for a fee, the Commissioner is hereby authorized to charge any underpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicant



Douglas M. Kubehl
Registration No. 41,915

Dated: 3-30-04

CUSTOMER NUMBER 05073

DAL01:788672

PTO-1449 Information Disclosure Citation in an Application		Application No.		Applicant(s) Mohammed N. Islam			
		Docket Number 074036.0133		Group Art Unit		Filing Date March 30, 2004	
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	US 2002/0032468 A1	03/14/2002	Hill et al.	607	2	09/26/2001
	B	US 2002/0082612 A1	06/27/2002	Moll et al.	606	130	10/05/2001
	C	US 2002/0128846 A1	09/12/2002	Miller	704	275	03/12/2001
	D	US 2002/0178003 A1	11/28/2002	Gehrke et al.	704	246	03/09/2001
	E	4,158,750	06/19/1979	Sakoe et al.	179	1	05/26/1977
	F	4,221,997	09/09/1980	Flemming	318	574	12/18/1978
	G	4,275,266	06/23/1981	Lasar	179	1	03/26/1979
	H	4,374,618	02/22/1983	Howard	355	50	03/16/1981
	I	4,403,605	09/13/1983	Tanikawa	128	6	04/20/1981
	J	4,462,080	07/24/1984	Johnstone et al.	364	513.5	11/27/1981
	K	4,516,207	05/07/1985	Moriyama et al.	364	424	02/24/1982
	L	4,523,884	06/18/1985	Clement et al.	414	8	10/08/1981
	M	4,605,080	08/12/1986	Lemelson	177	4	03/25/1985
	N	4,641,292	02/03/1987	Tunnell et al.	367	198	10/21/1985
	O	4,704,696	11/03/1987	Reimer et al.	364	513.5	01/26/1984
	P	4,728,974	03/01/1988	Nio et al.	354	81	05/30/1986
	Q	4,762,455	08/09/1988	Coughlan et al.	414	4	06/01/1987
	R	4,776,016	10/04/1988	Hansen	381	42	11/21/1985
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
	S	WO 97/15240	01.05.1997	PCT	A61B	19/00	X
	T	WO 97/49340	31.12.1997	PCT	A61B	17/00	X
	U	WO 01/50959 A1	19.07.2001	PCT	A61B	6/00	X
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
	V	G.S. Edwards et al., "Free-electron-laser-based biophysical and biomedical instrumentation," American Institute of Physics, Vol. 74, No. 7, pp. 3207-3245					2003
	W	Computer Motion, Inc., "501(k) Summary -ZEUS® MicroWrist™ Surgical System and Accessories," 6 pages					09/24/2002
	X	Computer Motion, Inc. "HERMES™ O.R. Control Center - 510(k) Summary of Safety and Effectiveness," 5 pages					10/11/2002
	Y	K.M. Joos, et al. "Optic Nerve Sheath Fenestration with a Novel Wavelength Produced by the Free Electron Laser (FEL)," Lasers in Surgery and Medicine, 27:191-205					2000
EXAMINER				DATE CONSIDERED			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							

U.S. Patent and Trademark Office

U.S. Patent and Trademark Office PTO-1449 Information Disclosure Citation in an Application		Application No. Docket Number 074036.0133		Applicant(s) Mohammed N. Islam Group Art Unit Filing Date March 30, 2004			
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	4,989,253	01/29/1991	Liang et al.	381	110	04/15/1988
	B	5,078,140	01/07/1992	Kwoh	128	653.1	09/23/1986
	C	5,086,401	02/04/1992	Glassman et al.	395	94	05/11/1990
	D	5,142,930	09/01/1992	Allen et al.	74	469	03/29/1991
	E	5,230,023	07/20/1993	Nakano	381	110	01/30/1991
	F	5,267,323	11/30/1993	Kimura	381	110	09/07/1990
	G	5,303,148	04/12/1994	Mattson et al.	364	413.01	10/30/1990
	H	5,305,427	04/19/1994	Nagata	395	94	05/15/1992
	I	5,313,306	05/17/1994	Kuban et al.	348	65	06/01/1993
	J	5,345,538	09/06/1994	Narayannan et al.	395	2.84	01/27/1992
	K	5,408,409	04/18/1995	Glassman et al.	364	413.13	12/20/1993
	L	5,544,654	08/13/1996	Murphy et al.	128	660.07	06/06/1995
	M	5,572,999	11/12/1996	Funda et al.	128	653.1	01/26/1995
	N	5,792,204	08/11/1998	Snell	607	32	06/13/1996
	O	5,812,978	09/22/1998	Nolan	704	275	12/09/1996
	P	5,950,629	09/14/1999	Taylor et al.	128	897	04/28/1994
	Q	5,970,457	10/19/1999	Brant et al.	704	275	08/30/1996
	R	US 6,185,535 B1	02/06/2001	Hedin et al.	704	270	10/16/1998
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
	S						
	T						
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
	U	J. Sanghera, I. Aggarwal, "IR Fiber Optics at NRL," 10 pages					
	V	J. Sanghera, L.B. Shaw, I.D. Aggarwal, "Applications of chalcogenide glass optical fibers," Academic of Science, pp. 1-11					2003
	W	B. Rigas, P.T.T. Wong, "Human Colon Adenocarcinoma Cell Lines Display Infrared Spectroscopic Features," Cancer Research, pp. 84-88					01/01/1992
	X	G. Edwards, et al., "Comparison of OPA and Mark-III FEL for Tissue Ablation at 6.45 Microns," Department of Physics and Free Electron Laser Laboratory, Duke University, 7 pages					
EXAMINER				DATE CONSIDERED			
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PTO-1449 Information Disclosure Citation in an Application			Application No.		Applicant(s) Mohammed N. Islam		
			Docket Number 074036.0133		Group Art Unit		Filing Date March 30, 2004
U.S. PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	US 6,224,542 B1	05/01/2001	Chang et al.	600	109	01/04/1999
	B	US 6,273,858 B1	08/14/2001	Fox et al.	600	466	06/26/2000
	C	US 6,278,975 B1	08/21/2001	Brant et al.	704	275	08/19/1999
	D	US 6,436,107 B1	08/20/2002	Wang et al.	606	139	03/03/1999
	E	US 6,442,430 B1	08/27/2002	Ferek-Petric	607	32	12/04/2000
	F	US 6,450,172 B1	09/17/2002	Hartlaub et al.	128	899	01/25/2000
	G	US 6,453,201 B1	09/17/2002	Daum et al.	607	62	12/28/1999
	H	US 6,462,500 B1	10/08/2002	L'Hegarat et al.	318	649	06/14/2000
	I	US 6,463,361 B1	10/08/2002	Wang et al.	700	258	09/22/1994
	J						
	K						
	L						
	M						
	N						
	O						
	P						
	Q						
	R						
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
	S						
	T						
NON-PATENT DOCUMENTS							
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
	U	Glenn Edwards, "Biomedical and potential clinical applications for pulsed lasers operating near 6.45 μ m," Society of Photo-Optical Instrumentation Engineers, 2 pages					1995
	V	PASSAT, "Solid-State Lasers and Optical Components," 5 pages					07/14/2003
	W	P.A. Thielen and L.B. Shaw, et al., "Small-core As-Se fiber for Raman amplification," OPTICS LETTERS, Vol. 28, No. 16, 3 pages					August 15, 2003
	X						
	Y						
EXAMINER				DATE CONSIDERED			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.							

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

04/01/2004 HMARZI1 00000046 10812608

01 FC:2001	385.00 OP
02 FC:2202	225.00 OP

PTO-1556
(5/87)

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2003

Application or Docket Number

10812608

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

TOTAL CLAIMS	25	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	25 minus 20 =	5
INDEPENDENT CLAIMS	3 minus 3 =	0
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	385.00
XS 9=	225
X43=	
+145=	
TOTAL	610

RATE	FEE
BASIC FEE	770.00
XS18=	
X86=	
+290=	
TOTAL	

SMALL ENTITY

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

1

APPLICATION FOR U.S. PATENT UNDER 37 C.F.R. § 1.53(b)

UTILITY PATENT APPLICATION TRANSMITTAL FORM

Mail Stop Patent Application
COMMISSIONER FOR PATENTS
Box 1450
Alexandria, Virginia 22313-1450

Sir:

Transmitted herewith for filing is the utility patent application of:

Inventor(s) or Application Identifier:

Mohammed N. Islam

Entitled: SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES

APPLICATION ELEMENTS:

1. ☒ This Fee Transmittal Form
2. Applicant is:
☐ Large Entity
☒ Small Entity
☐ Small Entity Statement enclosed
☒ Small Entity Statement filed in prior application.
Status still proper and desired.
3. ☒ Specification (57 Total Pages)
4. ☒ Drawings (8 Total Sheets)
 Formal
 ☒ Informal
5. ☒ Combined Declaration and Power of Attorney
 (2 Total Pages)
 ☐ Newly executed (original or copy)
 ☒ Copy from a prior application
 (for continuation/divisional only)

DAL01:788674

6. The accompanying application is:

☐ Original
☒ Continuation
☐ Divisional
☐ Continuation-In-Part (CIP)
Prior Application No.: 10/757,341
Filed: January 13, 2004
Examiner: Unknown
Group/Art Unit: Unknown

which is hereby incorporated by reference therein.

(For Continuation or Divisional Applications only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5 above, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.)

7. ☐ Priority of foreign Application No. _____,
filed on _____ is claimed under 35 U.S.C.
§ 119.

☐ A certified copy is attached.

☐ A certified copy was filed in prior Application
Serial No. _____, filed _____.

8. ☒ The prior application is assigned of record to
Cheetah Omni, LLC, a Delaware corporation, a copy of which is
attached.

FEE CALCULATION:

CLAIMS AS FILED IN THE APPLICATION, LESS ANY CLAIMS CANCELLED
BY PRELIMINARY AMENDMENT OR ADDED BY PRELIMINARY AMENDMENT

FEE CALCULATION					FEE
	Number		Number Extra	Rate	Basic Fee
					\$ 770.00
Total Claims:	45	- 20 =	25	X \$18 =	\$ 450.00
Independent Claims	3	- 3 =	1	X \$86 =	\$ 0.00
Total of Above					\$1,220.00
Less 50% for Small Entity					\$ 610.00
TOTAL FILING FEE =					\$ 610.00

ACCOMPANYING APPLICATION PARTS:

9. ☐ An Assignment of the invention to _____ is attached.
A separate cover sheet in compliance with 37 C.F.R. § 3.28 and
§ 3.31 is included with an Assignment recordal fee of
\$____ pursuant to 37 C.F.R. § 1.21(h).

10. ☒ Information Disclosure Statement (IDS) PTO-1449
☐ Copies of IDS Citations.
☒ Pursuant to 37 C.F.R. § 1.98(d), copies of
these references are not being furnished.

11. ☐ Preliminary Amendment

12. ☒ Certificate of Mailing

13. ☒ Return Receipt Postcard

14. ☒ Nonpublication Request

15. ☐ Other _____

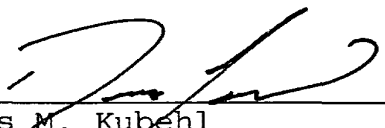
ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

4

16. [X] A check in the amount of \$610.00 to satisfy filing fee requirements under 37 C.F.R. § 1.16. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicant



Douglas M. Kubehl
Reg. No. 41,915

Date: 3-30-04

Correspondence Address:

Customer Number 05073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re-Application of: Mohammed N. Islam
Filing Date: March 30, 2004
For: SYSTEM AND METHOD FOR VOICE CONTROL OF
MEDICAL DEVICES

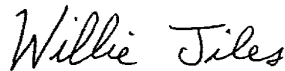
Mail Stop PATENT APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that the attached Patent Application (57 pages), Fee Transmittal (4 pages), Declaration and Power of Attorney (2 pages)(copy), Drawings (8 pages), Nonpublication Request (1 page), Information Disclosure Statement along with a three-page PTO-1449 Form, a check in the amount of \$610.00, a Baker Botts return acknowledgment postcard (1 card), and this Certificate of Mailing are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 30th day of March, 2004 addressed to Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.


Willie Jiles

Express Mail Receipt
No. EV 324645882 US
Attorney's Docket: 074036.0133

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)	Inventor	Mohammed N. Islam	
		SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES	
	Atty Docket Number	074036.0133	

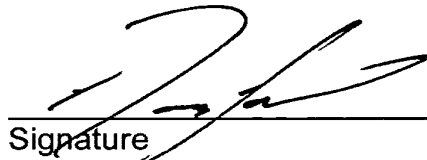
I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

BAKER BOTTS L.L.P.
Attorneys for Applicant

3-30-04

Date


Signature

Douglas M. Kubehl

Typed or printed name

Reg No. 41,915

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

1

APPLICATION FOR U.S. PATENT UNDER 37 C.F.R. § 1.53(b)

UTILITY PATENT APPLICATION TRANSMITTAL FORM

Mail Stop Patent Application
COMMISSIONER FOR PATENTS
Box 1450
Alexandria, Virginia 22313-1450

Sir:

Transmitted herewith for filing is the utility patent application of:

Inventor(s) or Application Identifier:

Mohammed N. Islam

**Entitled: SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL
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APPLICATION ELEMENTS:

1. ☒ This Fee Transmittal Form
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 ☐ Large Entity
 ☒ Small Entity
 ☐ Small Entity Statement enclosed
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 Status still proper and desired.
3. ☒ Specification (57 Total Pages)
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 ☒ Informal
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 (2 Total Pages)
 ☐ Newly executed (original or copy)
 ☒ Copy from a prior application
 (for continuation/divisional only)

DAL01:788674

ATTORNEY'S DOCKET NO.
074036.0133

PATENT APPLICATION

2

6. The accompanying application is:

☐ Original
☒ Continuation
☐ Divisional
☐ Continuation-In-Part (CIP)
Prior Application No.: 10/757,341
Filed: January 13, 2004
Examiner: Unknown
Group/Art Unit: Unknown

which is hereby incorporated by reference therein.

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§ 119.

☐ A certified copy is attached.

☐ A certified copy was filed in prior Application
Serial No. _____, filed _____.

8. ☒ The prior application is assigned of record to
Cheetah Omni, LLC, a Delaware corporation, a copy of which is
attached.

DAL01:788674

FEE CALCULATION:

CLAIMS AS FILED IN THE APPLICATION, LESS ANY CLAIMS CANCELLED
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FEE CALCULATION					FEE
	Number		Number Extra	Rate	Basic Fee
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Independent Claims	3	- 3 =	1	X \$86 =	\$ 0.00
Total of Above					\$1,220.00
Less 50% for Small Entity					\$ 610.00
TOTAL FILING FEE =					\$ 610.00

ACCOMPANYING APPLICATION PARTS:

9. ☐ An Assignment of the invention to _____ is attached.
A separate cover sheet in compliance with 37 C.F.R. § 3.28 and
§ 3.31 is included with an Assignment recordal fee of
\$____ pursuant to 37 C.F.R. § 1.21(h).

10. ☒ Information Disclosure Statement (IDS) PTO-1449
☐ Copies of IDS Citations.
☒ Pursuant to 37 C.F.R. § 1.98(d), copies of
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11. ☐ Preliminary Amendment

12. ☒ Certificate of Mailing

13. ☒ Return Receipt Postcard

14. ☒ Nonpublication Request

15. ☐ Other _____

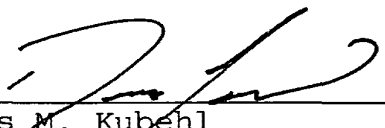
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PATENT APPLICATION

4

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BAKER BOTTS L.L.P.
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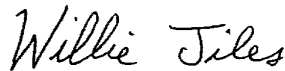
Mail Stop PATENT APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

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Willie Jiles

Express Mail Receipt
No. EV 324645882 US
Attorney's Docket: 074036.0133

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)	Inventor	Mohammed N. Islam	
		SYSTEM AND METHOD FOR VOICE CONTROL OF MEDICAL DEVICES	
	Atty Docket Number	074036.0133	

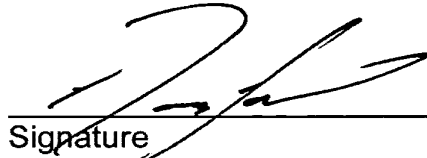
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I hereby request that the attached application not be published under 35 U.S.C. 122(b).

BAKER BOTTS L.L.P.
Attorneys for Applicant

3-30-04

Date


Signature

Douglas M. Kubehl

Typed or printed name

Reg No. 41,915

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.