			USOCR			
L20	59	suture and pigment with chromium with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 17:36
L21	31	filament same pigment with chromium with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 17:46
L22	3	filament with pigment with chromium with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 17:48
L23	6	aluminum-chromium-cobalt	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:08
L24	4	aluminum-chromium-cobalt with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:08
L25	9584	aluminum with chromium with cobalt with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:13
L26	83	(suture or filament) same aluminum with chromium with cobalt with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:13
L27	15	(suture or filament) with aluminum with chromium with cobalt with oxide	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:14
L28	253	UHMWPE and intrinsic and viscosity and dl/g	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L29	132	UHMWPE same intrinsic same viscosity same dl/g	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L30	132	UHMWPE same intrinsic with viscosity same dl/g	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L31	88	UHMWPE same intrinsic with viscosity with dl/g	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L32	70	UHMWPE with intrinsic with viscosity with dl/g	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L33	24	suture and (UHMWPE with intrinsic with viscosity with dl/g)	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:30
L34	1	suture same (UHMWPE with intrinsic with viscosity with dl/g)	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:31
L35	29	multifilament and (UHMWPE with intrinsic with viscosity with dl/g)	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/12 18:34
S1	1	12/599869	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:50
S2	2	("20030050667" | "5613987").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:52
S3	824	606/228.ccls.	US-PGPUB; USPAT;	OR	OFF	2012/07/02 11:52

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			USOCR			
S4	644	suture and ((ultra-high near3 polyethylene) or UHMwPE)	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:55
S5	202	suture same ((ultra-high near3 polyethylene) or UHMwPE)	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:55
S6	5	suture same ((ultra-high near3 polyethylene) or UHMwPE) same multi-filament	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:56
S7	12	suture same ((ultra-high near3 polyethylene) or UHMwPE) and dl/g	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:57
S8	1	suture same ((ultra-high near3 polyethylene) or UHMwPE) same dl/g	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:57
S9	12	suture same ((ultra-high near3 polyethylene) or UHMwPE) and dl/g	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:58
S10	12	suture same ((ultra-high near3 polyethylene) or UHMwPE) and dl/g	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 11:59
S11	1	suture same ((ultra-high near3 polyethylene) or UHMwPE) same dl/g	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 12:00
S12	32	Simmelink.inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 13:26
S13	14	Simmelink.inv. and suture	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 13:26
S14	65	S3 and suture and ((ultra-high near3 polyethylene) or UHMwPE)	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/02 13:27
S15	33	UHMwPE and spinning and solvent and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 14:08
S16	26	(suture or filament) and UHMwPE and spinning and solvent and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 14:08
S17	2	(suture or filament) and UHMwPE same spinning same solvent same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 14:08
S18	10	(suture or filament) and UHMwPE and spinning with solvent and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 14:11
S19	404	spinning same solvent same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:00
S20	1	suture same spinning same solvent same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:01
S21	343	UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:19
S22	49	(suture or filament) and UHMwPE and solvent and pigment	US-PGPUB; USPAT;	OR	OFF	2013/05/22 15:19

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			USOCR			
S23	2	(suture or filament) and UHMwPE same solvent same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:21
S24	3	(suture or filament) same UHMwPE same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:22
S25	2	suture same UHMwPE same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:26
S26	2	suture and UHMwPE same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:27
S27	25	suture and UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:27
S28	74	suture and UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/22 15:27
S29	9	suture and multi-filament and UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:28
S30	6	(US-20080004702-$ or US-20030050667-$ or US-20080287990-$ or US-20090048628-$ or US-20070154707-$).did. or (US-5370911-$).did.	US-PGPUB; USPAT	OR	ON	2013/05/22 15:34
S31	1	S30 and pigment	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/22 15:35
S32	2	suture same UHMwPE same pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:35
S33	117	suture with pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:36
S34	1	suture and multi-filament with pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:36
S35	9	multi-filament and UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:37
S36	2	multi-filament same UHMwPE and pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:37
S37	2	multi-filament and suture with pigment	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/22 15:43
S38	966	606/228.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/02 14:49
S39	9	(US-20080004702-$ or US-20030050667-$ or US-20080287990-$ or US-20090048628-$ or US-20070154707-$).did. or (US-5370911-$ or US-4008303-$ or US-	US-PGPUB; USPAT	OR	ON	2014/07/09 13:15

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		5651377-$ or US-6060007-$).did.				
S40	4	S39 and gel	US-PGPUB; USPAT; USOCR	OR	ON	2014/07/09 13:15
S41	1	"05076531.2"	US-PGPUB; USPAT; USOCR	OR	ON	2014/07/09 13:17
S42	1	"05076531.2"	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2014/07/09 13:17
S43	1	"05076531.2"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/09 13:17
S44	4	S39 and intrinsic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/07/09 13:19

EAST Search History (Interference)

<This search history is empty>

8/12/2014 7:13:43 PM
C:\Users\sdang\Documents\EAST\Workspaces\12599869.wsp

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IPR2024-00493

Receipt date: 02/03/2014
Sheet 1 of 1

12599869 - GAU: 3773

PTO/SB/08a

Atty. Docket No.	Appln. No.
BHD-4662-1326	12/599,869
Applicant	
SIMMELINK et al.	
Filing Date	**TC/A.U.**
January 16, 2013	3773

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

		DOCUMENT	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO

OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

		THERMOPLAST® BLUE 684, BASF Corourants for Plastics (Oct. 1998).

*Examiner	/Phong Son Dang/	Date Considered	06/02/2014

Examiner: Initial if reference 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 applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /S.D./

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/599,869	01/14/2010	Joseph Arnold Paul Maria J.A.P.M Simmelink	BHD-4662-1326	3921

23117 7590 09/09/2014

NIXON & VANDERHYE, PC
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EXAMINER	
DANG, PHONG SON H	
ART UNIT	**PAPER NUMBER**
3773	

NOTIFICATION DATE	DELIVERY MODE
09/09/2014	ELECTRONIC

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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):

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/599,869	14 January, 2010	SIMMELINK ET AL.	BHD-4662-1326

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ARLINGTON, VA 22203

EXAMINER	
SON DANG	
ART UNIT	PAPER
3773	20140904

DATE MAILED:

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Commissioner for Patents

This communication is to provide the applicant with the cited prior art references that was missing in the PTO-892 sent out on 08/20/2014.

/S. D./ Examiner, Art Unit 3773	/TUAN V NGUYEN/ Primary Examiner, Art Unit 3731

PTO-90C (Rev.04-03)

Notice of References Cited	Application/Control No. 12/599,869	Applicant(s)/Patent Under Reexamination SIMMELINK ET AL.	
	Examiner SON DANG	Art Unit 3773	Page 1 of 2

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*	B	US-3,166,073 A	01-1965	LEONARD KRONENTHAL RICHARD	606/229
*	C	US-3,565,652 A	02-1971		106/166.82
*	D	US-3,698,853 A	10-1972		8/94.11
*	E	US-4,008,303 A	02-1977	Glick et al.	264/78
*	F	US-5,370,911 A	12-1994	Throne et al.	427/469
*	G	US-5,651,377 A	07-1997	O'Donnell, Jr., Francis E.	128/898
*	H	US-6,060,007 A	05-2000	Hutton et al.	264/78
*	I	US-2003/0050667 A1	03-2003	Grafton et al.	606/228
*	J	US-2004/0267313 A1	12-2004	Amery et al.	606/228
*	K	US-2005/0208096 A1	09-2005	Shalaby, Shalaby W.	424/423
*	L	US-2006/0045899 A1	03-2006	Sarangapani, Shantha	424/405
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	P					
	Q					
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	S					
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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HONEYWELL INTERNATIONAL INC. v. DSM IP ASSETS B.V.
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Notice of References Cited	Application/Control No. 12/599,869	Applicant(s)/Patent Under Reexamination SIMMELINK ET AL.	
	Examiner SON DANG	Art Unit 3773	Page 2 of 2

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*	C	US-2008/0004702 A1	01-2008	Denoziere, Guilhem	623/17.13
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*	E	US-2008/0287990 A1	11-2008	Smit, Leo	606/228
*	F	US-2009/0012251 A1	01-2009	Dirks et al.	526/352
*	G	US-2009/0048628 A1	02-2009	Marissen, Roelof	606/231
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	Confirmation No. **3921**
SIMMELINK et al.	Atty. Ref.: **BHD-4662-1326**
Appl. No. **12/599,869**	Examiner: **DANG, Phong Son H**
Filed: **01/14/2010**	Art Unit: **3773**

For: **COLORED STRUCTURE**

* * * * * * * * * * *

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

Date: November 20, 2014

AMENDMENT III

Sir:

The following comments and amendments are intended to be fully responsive to the Official Action dated August 20, 2014, which set a nominal response due date of November 20, 2014.

Pursuant to 37 CFR §1.121, each section of the subject Amendment (e.g., Claim Amendments, Specification Amendments, Drawing Amendments and Remarks) as may be appropriate to the issues raised in the Official Action to which this paper responds, begins on a separate page. Changes to the original text, claims and the like are shown by striking through language to be deleted and underlining of language to be added.

AMENDMENT TO THE CLAIMS:

The following claim set replaces all prior versions, and listings, of claims in the application:

1.-15. (canceled)

16. (currently amended) A suture consisting of [[a]] multi-filamentary yarn and at most 20 mass% of other components, wherein at least 50 mass% of the yarn consists of gel-spun filaments consisting of ultra-high molecular weight polyethylene (UHMwPE) having an intrinsic viscosity (IV) of between about 8 and 40 dl/g, between 0.1 and 7.0 wt.% of an inorganic chromium oxide-containing pigment, a residual amount of less than about 800 ppm of a spin solvent, and less than 1000 ppm of further constituents.

17. (currently amended) The suture according to claim 16, wherein the amount of the inorganic pigment present in the filaments of the suture is ~~lower than~~ between 0.3 wt.% and 5.0 wt. %.

18. (currently amended) The suture according to claim 16 or 17, wherein the amount of the inorganic pigment present in the filaments of the suture is lower than 2.0 wt. %.

19. (canceled)

20. (currently amended) The suture according to claim [[19]]16, wherein the inorganic pigment is aluminum-chromium-cobalt oxide.

21. (previously presented) The suture according to claim 16, wherein the filaments contain a residual amount of less than 500 ppm of the spin solvent.

22. (previously presented) The suture according to claim 16, wherein the filaments contain a residual amount of less than 250 ppm of the spin solvent.

23. (previously presented) The suture according to claim 16, wherein the filaments contain a residual amount of less than 100 ppm of the spin solvent.

24. (previously presented) The suture according to claim 16, wherein the filaments contain a residual amount of less than 60 ppm of the spin solvent.

25. (new) The suture according to claim 16, wherein the filaments contain less than 500 ppm of further constituents.

26. (new) The suture according to claim 16, wherein the filaments contain less than 200 ppm of further constituents.

27. (new) The suture according to claim 16, wherein at least 60 mass% of the yarn consists of said gel-spun filaments.

28. (new) The suture according to claim 16, wherein at least 90 mass% of the yarn consists of said gel-spun filaments.

29. (new) The suture according to claim 16, wherein the suture consists of the at least one multi-filamentary yarn and at most 10 mass% of other components.

30. (new) The suture according to claim 16, wherein the suture consists of the at least one multi-filamentary yarn and at most 5 mass% of other components.

31. (new) The suture according to claim 16, wherein the suture consists of said gel-spun filaments.

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REMARKS

Favorable reconsideration and allowance of this application are requested.

1. Discussion of Amendments

By way of the amendment instructions above, prior claims 1-15 have been canceled without prejudice or disclaimer. Claim 16 is now the sole independent claim pending herein for consideration.

Claim 16 has been amended so as to emphasize that the suture "consists of" multi-filamentary yarn (typically a suture is a twisted, braided construction comprised of multiple strands or yarns) and *at least 20 mass% of other components* and that the inorganic pigment is a *chromium oxide-contain* pigment. Support for such amendment can be found throughout the originally filed specification, for example, at page 4, lines 14-19 and page 5, lines 6-11. Claim 19 has been canceled as redundant and the dependency of claim 20 has thereby been adjusted.

Claim 17 has been amended to receipt a lower range value as supported by page 4, lines 20-26 of the originally filed specification. Claim 18 has been amended to be multiply dependent from claim 16 or 17.

New claims 25-31 have been submitted so as to specify the content of the "further constituents", the content of the filaments and the content of the "other components" as supported by page 4, lines 27-31 and page 5, lines 6-29 of the originally filed specification.

Following entry of this amendment, therefore, claims 16-18 and 20-31 will remain pending herein for consideration. As will become evident from the following discussion, all such pending claims are in condition for allowance.

2. Claim Rejections – 35 USC §103

The only issue remaining to be resolved in this application is the Examiner's rejection of prior independent claim 16 and the claims dependent therefrom under 35 USC §103(a) as allegedly being "obvious", and hence unpatentable, based on the combination of Grafton in view of numerous secondary references.[1] Applicants respectfully disagree with such conclusion.

At the outset, applicants note that the Examiner has erroneously interpreted the amount of residual spin solvent as being a "product-by-process" limitation.[2] Clearly, "spin solvent" is a *physical constituent* of the fiber when it is gel-spun. As such, the *amount* of "spin solvent" is a *quantifiable* and hence *physical attribute* of the fiber per se. To allege as the Examiner has done that the residual amount of spin solvent as defined in the claims is merely a "product-by-process" limitation is therefore reversible error.

Applicants further submit that the Examiner's interpretation of the pending claims herein vis-à-vis the primary reference to Grafton is likewise erroneous. In this regard, pending independent claim 16 herein is directed toward Claim 16 as currently amended defines a colored suture that consists of

- multi-filamentary yarn and
- at most 10 mass% of other components, wherein the yarn consists of
- at least 50 mass% gel-spun filaments, and wherein
- the filaments consist of
  - ultra-high molecular weight polyethylene (UHMwPE) having an intrinsic viscosity (IV) of between about 8 and 40 dl/g,
  - between 0.1 and 7.0 wt.% of an inorganic pigment containing chromium oxide,

---

[1] The cancellation of claims 1-15 renders moot all rejections that have been advanced thereagainst.

[2] "This limitation [of the amount of residual spin solvent] has been treated as a product by process claim" Official Action at page 7, lines 10-16.

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- a residual amount of less than about 800 ppm of a spin solvent, and
- less than 1000 ppm of further constituents.

Grafton discloses a colored braided suture, which suture comprises a mixture of *non-colored* UHMwPE multi-filamentary yarn and *colored nylon or polyester* multi-filamentary yarn, and typically further comprises a coating; see e.g. paragraphs [0006], [0012] and the abstract. More specifically, Grafton relates to:

> [0008] In a preferred embodiment, the suture includes a multifilament cover formed of ultrahigh molecular weight polyethylene fiber braided with polyester and nylon fibers. The cover surrounds a fiber core substantially or entirely of ultrahigh molecular weight polyethylene. The core preferably comprises 3 strands of ultrahigh molecular weight polyethylene, twisted at about 3 to 6 twists per inch.
>
> [0009] The cover preferably comprises 8 strands of ultrahigh molecular weight polyethylene braided with 6 strands of polyester and 2 strands of nylon, the nylon strands being provided in black or some other contrasting color as explained in greater detail below.

The *colored* fibers are further described by Grafton in paragraph [0013]:

> [0013] As an added advantage, as mentioned above, all or some of the nylon fibers (or the polyester fibers) in the cover are provided in a contrasting color for visibility and identification purposes. A few trace threads having a contrasting color, preferably of a readily dyed fiber such as polyester or nylon, in the cover aid surgeons in identifying the travel direction of the suture during surgery, particularly during arthroscopic operations. Providing the trace threads in a regularly repeating pattern is particularly useful, allowing the surgeon to distinguish different ends of lengths of suture, and determine the direction of travel of a moving length of suture. Of the more easily dyed fibers, nylon is preferred in that it accepts dye readily. Polyester fibers are stronger, but do not take up dye as easily as nylon.

Whereas the UHMPE fibers are explicitly described in paragraph [0020] of Grafton as *not* being colored:

> **[0020]** UHMWPE strands **8** are substantially translucent or colorless. The majority of the polyester strands **10** are white (undyed), with one or more additional polyester or nylon strands **12** having a contrasting color provide a trace in the suture. Due to the transparent nature of the UHM-WPE, the suture takes on the color of strands **10** and **12**, and thus appears to be white with a trace in the contrasting color. In accordance with the present invention, trace strands **12** are preferably provided in black. The black trace assists the surgeon in differentiating between suture strands with the trace and suture strands without the trace. The trace also assists the surgeon in identifying whether the suture is moving.

Grafton further indicates that the therein disclosed suture may contain 5-90 mass% of UHMwPE fibers, preferably at least 40 mass%.

Grafton therefore clearly does *not* disclose or suggest a suture containing *colored UHMwPE yarn*, let alone a yarn comprising filaments colored with a *chromium oxide-containing pigment*. Grafton is also completely silent regarding the molar mass or Intrinsic Viscosity of the UHMwPE, and the other components specified by the applicants' pending claims herein, including the residual spin solvent content of the yarn.

The Examiner apparently recognizes these deficiencies of Grafton as he then turns to numerous secondary references to Sarangapani (US2006/0045899), Shalaby (US2005/0208096), Amery (US2004/0267313), Dirks (US2009/0012251), Burnet (US3565652) and Kuhn (US2006/008475) in an attempt to establish statutory "obviousness" of the subject invention as defined by independent claim 16 and the claims dependent thereon. The mere fact however that such numerous references have been required to be cited for various isolated and disparate disclosures in order to establish the alleged obviousness of the claims invention in fact is evidence to the contrary, namely that present claim 16 was not obvious at all to a skilled person in view of prior art at the time of the invention.

As noted previously, Grafton at least does not disclose a suture that contains colored multi-filament yarn with filaments consisting of UHMwPE and specific amounts of inorganic chromium-containing pigment, spin solvent and further constituents.

The problem that is solved by the differences between claim 16 and Grafton is therefore to provide a suture containing colored UHMwPE filaments from which colorant does not leach and which filaments have mechanical properties, such as tensile strength, that do not deteriorate due to the presence of the colorant. This problem indeed is solved by the suture of the presently pending claims as is evidenced by the examples I-IV and comparative experiments provided in the originally filed application showing that the selected pigment class does not leach from the yarn and its amount does not seriously adverse tensile properties.

Nowhere in Grafton it is indicated or suggested that a chromium oxide-containing pigment, e.g. aluminum-chromium-cobalt oxide, would or could be used as a colorant to make *colored UHMwPE filaments* without significant loss of properties, and sutures containing such filaments, which show favorable mechanical properties and no leaching of the colorant.

Grafton simple does not even suggest to use a *colored UHMwPE yarn* to make a suture and in fact teaches directly *against* the use of colored UHMwPE yarn. In this regard, it will be seen from the passages cited previously that Grafton directs the ordinarily skilled person away from presently claimed invention by explicitly teaching a different approach, namely the use a colored fiber based on a polymer *other than* UHMwPE in order to make colored suture.

The examiner has cited Sarangapani which concerns an antimicrobial composition that can be used to form an antimicrobial coating on a surface, especially on a metal-based medical device; see paragraph [0002]. Sarangapani relates to an entirely different problem that that of the presently claimed invention. As such, an ordinarily skilled person would not have had any reasonable expectation of success by

proceeding directly against the teaching of Grafton and employ the teachings of Sarangapani with respect to the therein disclosed pigment.

It is of course axiomatic that the applied prior art must suggest the desirability of the modification. Indeed, the Examiner has pointed out all the elements that are nakedly disclosed in Grafton with regard to the claimed pigment, the difference between Grafton and the claims at issue, and that such difference can allegedly be overcome by picking the missing elements from, e.g., Sarangapani so that the combination of Grafton and Sarangapani achieve the claimed invention when further combined with numerous other secondary references.

However, it appears that there is *no indication on the record* to indicate why Sarangapani is pertinent prior art to begin with and what the level of ordinary skill in the pertinent prior art would be (i.e., the factors required by the *Graham* decision[3] of determining the scope and content of the prior art and resolving the level of ordinary skill in the pertinent prior art). Nor does there appear to be an articulated reasoning why the ordinarily skilled person would be motivated to combine Sarangapani with Grafton to arrive at the presently claimed invention. In the applicants' view therefore, the rejection advanced principally on the basis of Grafton and Sarangapani is inappropriate for several reasons.

The *Graham* decision of course has been extensively discussed in the more recent case *KSR Int'l. Co. v. Teleflex Inc. et al*, 550 U.S. 398 (2007) (hereinafter "*KSR*"). There the Court noted that:

> "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether

[3] *Graham v. John Deere Co.,* 382 U.S. 1, 148 USPQ 456 (1966).

> there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit."[4]

After conducting a proper analysis of the prior art, applicants suggest that the inevitable conclusion to be reached is that the presently claimed invention is statutorily *un*obvious.

In this regard, as noted above, Sarangapani which concerns an antimicrobial composition that can be used to form an antimicrobial coating on a surface, especially on a metal-based medical device. In contrast, the presently claimed invention is directed to a colored suture formed of multi-filament yarn consisting of at least 50 mass% of gel-spun filaments of UHMwPE, an inorganic chromium-containing oxide, and a low residual spin solvent. An ordinarily skilled person would thus recognize that the problems associated with the incorporation of an inorganic pigment into a gel-spun fiber is clearly different as compared to forming a coating on a surface. Therefore Sarangapani and the presently claimed invention relate to different art areas and problems. As such, Sarangapani is not pertinent prior art to the presently claimed invention (i.e., is not part of the "scope and content" of the prior art mandated by *Graham*).

Even if Sarangapani is considered pertinent, the level of ordinary skill of Sarangapani is that of preparation of pigment-colored gel-spun filaments -- not antimicrobial coatings.

There is no indication in Sarangapani that the therein disclosed pigments would or could be employed in gel-spun filaments. Moreover, as noted above the explicit teaching in Grafton is that gel-spun UHMwPE fibers should *not* be colored. Thus Sarangapani is not pertinent prior art and would not have prompted a person ordinarily

---

[4] *KSR* at 418 *citing In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

skilled in the relevant field (of pigment-containing gel-spun fibers) to combine Sarangapani with Grafton in such a way to arrive at the presently claimed invention.

What is required by an analysis under 35 USC §103(a) is thus more than merely "cherry picking" words or phrases from one prior art reference and combining it with another. As the Supreme Court also observed in *KSR:*

> "…a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."[5]

Thus, when the prior art is analyzed properly according to the standards of *Graham* it must be concluded that the presently claimed invention is patentably *un*obvious. That is, the current record does not identify a reason that would have prompted a person of ordinary skill in the field relevant to the present invention to combine the elements in the manner claimed. The only conclusion therefore that can be drawn in the absence of such reasoning is that the rejection based principally on

[5] *KSR* at 418-419, emphasis added.

Grafton and Sarangapani is based impermissibly on hindsight. [6]

Even if one were to assume *arguendo* that an ordinarily skilled person would consider Sarangapani pertinent, there would still be no hint towards the missing features of applicants' pending claims. That is, the oridinarily skilled person would only be informed that an antimicrobial composition could comprise a pigment as coloring agent. More specifically, Sarangapani indicates to use 0.001-0.25 wt% of copper phthalocyanine as an FDA approved pigment; see paragraph [0019]. The ordinarily skilled person could at best have only derived that relatively low amounts of a copper-based pigment may be employed, but would not have been guided to the requirements of presently pending independent claim 16.

The other secondary references cited by the Examiner to demonstrate the alleged "obviousness" of the applicants' claimed invention are likewise deficient. In this regard, applicants note that the cited Shalaby publication relates to colored surgical implants that can be radiation-sterilized without compromising their color. The implants may comprise coated braided multifilament sutures, based on absorbable or non-absorbable polymer; see paragraphs[0008]-[0009]. Addressing the problem of low color-fastness upon sterilization with radiation of an implants, Shalaby teaches to make a surgical implant from a polymer mixed with a lipophilic dispersed *organic dye*, specifically with the organic dye D&C Yellow 11; see the entire disclosure of Shalaby and claims 1, 17, 18 and 2 thereof.

Official Notice may be taken that a person of ordinary skills in the art would understands a "dye" to be fundamentally different from a "pigment." Specifically, the meanings of "dye" and "pigment" would be unambiguously clear to a skilled person in the art. The difference between a "dye" on the one hand and a "pigment" on the other

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[6] The Court of Appeals, Federal Circuit regards hindsight as an insidious and powerful phenomenon and is a tempting, but forbidden zone in the inquiry of addressing the statutory obviousness standard. *See, e.g., Panduit Corp. v. Dennison Mfg. Co.,* 227 USPQ 337 (Fed. Cir. 1985) *and Loctite Corp. v. Ultraseal Ltd.,* 228 USPQ 90, 98 (Fed. Cir. 1985).

hand are found in relevant textbooks. See also in this regard, the discussion at http://en.wikipedia.org/wiki/Pigment (emphasis added):

> "A *pigment* is a material that changes the color of reflected or transmitted light as the result of wavelength-selective absorption.....Pigments are used for coloring paint, ink, plastic, fabric, cosmetics, food and other materials. Most pigments used in manufacturing and the visual arts are dry colorants, usually ground into a fine powder. This powder is added to a vehicle (or binder), a relatively neutral or colorless material that suspends the pigment and gives the paint its adhesion.
>
> ******
>
> A distinction is usually made between a *pigment*, which is *insoluble in its vehicle* (resulting in a *suspension*), and a *dye*, which either is itself a *liquid or is soluble in its vehicle* (resulting in a *solution*)…."

The ordinarily skilled person would thus have found no suggestion at all in Shalaby towards employing a *pigment* of the variety claimed herein. On the contrary, the only teaching provided by Shalaby would be the use of an organic dye -- not an inorganic pigment -- which would have lead away from the herein claimed invention. Thus even if combined with Grafton and Sarangapani, the cited reference to Shalaby would not cure the deficiencies as discussed previously.

Amery et al relates to a braided suture made from UHMwPE filaments. Amery et al therefore merely confirms that the level of residual spin solvent, especially decalin, in gel-spun UHMwPE should be low, and preferably below 100 ppm for biocompatibility reasons. Amery et al only refers to non-disclosed "secondary processing" to obtain such level, and moreover is completely silent on coloring of UHMwPE filaments. As

such, Amery et al does not render obvious the presently claimed invention even when combined with Grafton, Sarangapani and Shalaby.

The examiner further applies the Dirks reference, which describes a process of making a monofilament-like product from multifilament UHMwPE yarn by fusing filaments by exposure to elevated temperature while stretching and compressing the yarn. The obtained monofilament-like product is especially suited for use as fishing line.

As Dirks addresses a completely different problem, the ordinarily skilled person would not have considered it to be part of the disclosure pertinent to the claimed invention herein (i.e., would not be part of the "prior art" to be assessed according to the *Graham* standards). However, even assuming *arguendo* that Dirks is pertinent to the claimed invention, the ordinarily skilled person would only have found a description of multifilament UHMwPE yarn that is suitable for use as starting material in the therein described fusing process. More specifically, Dirks mentions such yarn based on UHMwPE having a IV of 5-40 dl/g and from which spin solvent can be removed by evaporation and/or extraction; see paragraph [0013]. It is further disclosed that UHMwPE yarn can contain less than 5 or preferably less than 3 mass% of customary additives like anti-oxidants, stabilizers and colorants, see paragraph [0026] and paragraph [0037]. Thus, Dirks does not disclose or suggest the amount and/or type of pigment as defined by pending claim 16 herein.

The publication by Burnet concerns a method of making colored yarn of viscose, also called rayon or regenerated cellulose. Cellulose is of course a completely different material as compared to polyethylene. Specifically it will be understood that the viscose spinning process also comprises chemical cellulose modification steps which are self-evidently clearly distinct from the conventional gel-spinning of UHMwPE. Burnet therefore is submitted to be entirely irrelevant to the herein claimed invention.

Howver, even assuming *arguendo* that an ordinarily skilled person in the relevant art were to consider Burnet, the deficiencies of the references discussed above would not be overcome. That is, Burnet discloses a method of making colored regenerated

cellulose filament yarns, which comprises adding pigment in the form of a "finely divided *glass frit*" to the viscose spin solution, [c 1 l 67-70]. Such glass frit is prepared in a separate reaction step from mixtures of silica with other metal oxides, including colored oxides like chromium oxide; see [c 2 l 22-37], and example 1.

It is further indicated in Burnet that pigments like chromium and cobalt oxides can*not* be used as such in a viscose process without causing great loss of strength of the yarn product [c 1 l 40-46]. The Burnet publication thus instructs a skilled person to use silica-based mixed oxide glass frits as pigment particles in a spinning process (to make colored viscose), and *not* the metal oxide itself.

Therefore, even if an ordinarily skilled person would derive motivation from Burnet to apply its disclosures to the problem of providing a suture containing colored UHMwPE filaments from which colorant does not leach and which filaments have high tensile strength, the attributes of pending independent claim 16 would not be the result.

The cited Kuhn reference merely relates to curable silicone rubber compositions for high-voltage insulators -- a technical field that is disparately remote from that of the presently claimed invention thereby not being within the scope of the relevant art as mandated by the *Graham* standards. Also the problem addressed by Kuhn – i.e., improving storage stability and processing characteristics of such silicone compositions -- is completely irrelevant to the problem confronting the present applicants. Therefore, an ordinarily skilled person would most certainly not consider Kuhn to be pertinent to the problem of providing an improved colored suture consisting of multifilamentary yarn having colored UHMwPE filaments.

Even assuming *arguendo* that an ordinarily skilled person in the art area relevant to the claimed invention herein were to be cognizant of Kuhn, there would be no teaching therein that would have directed towards the product features of independent claim 16 herein. Specifically, Kuhn discloses silicone rubber compositions containing aluminum hydroxide (ATH) as filler material. The Kuhn publication is predominantly concerned with addressing the problems related to use of (surface-treated) ATH in

curable multi-component silicone compositions. The main teaching of Kuhn is to add a further compound to the curable composition that liberates a base or acid upon heating; see e.g. paragraphs [0026]-[0042] and [0096]. It is also mentioned that the compositions can comprise pigments, with a long list of exemplary compounds including "aluminum-chromium-cobalt spinels" being provided in paragraph [0111]. However, no further information is given in Kuhn.

The Kuhn publication thus merely confirms that aluminum-chromium-cobalt pigments were known materials at the time of the herein claimed invention. Applicants certainly do not dispute that aluminum-chromium-cobalt pigments were *per se* known. However, the present applicants are *not* claiming to be the first inventors of aluminum-chromium-cobalt pigments. Thus, the general knowledge in the art that aluminum-chromium-cobalt compounds may be employed as pigments generally would not have provided any suggestion at all that such pigment would be suitable for and offer specific advantages in making colored UHMwPE multifilament yarn for use in a suture as is claimed herein.

Thus, as should now be evident, the prior art relied upon by the Examiner would not provide an ordinarily skilled person with any expectation of success to obtain a colored suture consisting of multifilamentary yarn having at least 50 mass% of gel-spun UHMwPE filaments colored with an inorganic chromium-containing pigment.

In closing, the applicants note that the examiner asserts in paragraph 12 page 9 of the Official Action that the claimed feature of the filaments containing less than 1000 ppm of other constituents would be "obvious" because the ordinarily skilled person would realize that "…the more pure the material, UHMWPE, and the less of other constituent or other materials, the stronger the strength for the suture". In fact, this very argument as raised by the examiner strongly supports the conclusion that a suture based on UHMwPE yarn containing 0.1-7.0 wt.%, or preferably 0.3-5 .0 wt.% of inorganic chromium-containing *pigment* which does not deteriorate tensile properties and is not leached from the suture is indeed a very surprising and unexpected result. In

fact, as asserted by the Examiner, one would not expect success to achieve a stronger suture by the incorporation of a coloring pigment in the amount as specified by the pending claims herein. Instead, the ordinarily skilled person (as acknowledged by the Examiner) would seek to eliminate the presence of such pigment.

It is thus concluded that it was not at all "obvious" for a person of ordinary skill in the art at the time of the claimed invention to combine the disclosures and teachings of the applied references of record. Even if combined, however, the presently claimed invention would not have been the result. Therefore, the suture defined by independent claim 16 and the claims dependent therefrom are patentably unobvious over the applied prior art references of record.

Withdrawal of the rejections advanced under 35 USC §103(a) and early passage of this application to allowance are therefore solicited.

3. Fee Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

NIXON & VANDERHYE P.C.

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Electronic Patent Application Fee Transmittal

Application Number:	12599869
Filing Date:	14-Jan-2010
Title of Invention:	COLORED SUTURE
First Named Inventor/Applicant Name:	Joseph Arnold Paul Maria J.A.P.M Simmelink
Filer:	Bryan H. Davidson/Dawn Barbour
Attorney Docket Number:	BHD-4662-1326

Filed as Large Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Multiple dependent claims	1616	1	780	780
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**780**

Electronic Acknowledgement Receipt	
EFS ID:	20760975
Application Number:	12599869
International Application Number:	
Confirmation Number:	3921
Title of Invention:	COLORED SUTURE
First Named Inventor/Applicant Name:	Joseph Arnold Paul Maria J.A.P.M Simmelink
Customer Number:	23117
Filer:	Bryan H. Davidson/Dawn Barbour
Filer Authorized By:	Bryan H. Davidson
Attorney Docket Number:	BHD-4662-1326
Receipt Date:	20-NOV-2014
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Time Stamp:	23:29:22
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Authorized User	DAVIDSON, BRYAN H.
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 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		11-20-2014_AMD_III.pdf	662791 67121dad6735d0ca21fc8d05411eedf398506826	yes	17

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	3
	Applicant Arguments/Remarks Made in an Amendment	4	17

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30554 5fbb2af96f74a39c7e89f3c643b1853a9a29d4d1	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	693345		

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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>
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<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.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/599,869	Filing Date 01/14/2010	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	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 $310 ($155 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	

APPLICATION AS AMENDED – PART II

AMENDMENT	11/20/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 20	= 2	X $80 =	160
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**160**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	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	

* 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.

LIE
/VICTOR BARLOW/

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.**
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/599,869	01/14/2010	Joseph Arnold Paul Maria J.A.P.M Simmelink	BHD-4662-1326	3921

23117 7590 04/15/2015

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
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EXAMINER	
DANG, PHONG SON H	

ART UNIT	PAPER NUMBER
3773	

NOTIFICATION DATE	DELIVERY MODE
04/15/2015	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):

PTOMAIL@nixonvan.com
pair_nixon@firsttofile.com

Office Action Summary	Application No. 12/599,869	Applicant(s) SIMMELINK ET AL.	
	Examiner SON DANG	Art Unit 3773	AIA (First Inventor to File) Status No

-- 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* MONTHS 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 *11/20/2014*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ 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*

5)☒ Claim(s) *16-18 and 20-31* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *16-18, 20-31* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ 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).

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).

Certified copies:

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)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

1. The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. The following is a quotation of pre-AIA 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 negatived by the manner in which the invention was made.

3. Claims 16-18, 20, 25-31 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US 2009/0012251 to Dirks et al. (Dirks) in view of US 2006/0084745 to Kuhn.

Dirks teaches:

> A suture consisting of multi-filamentary yarn and at most 20 mass%, 10 mass% of other components (para. 26), wherein at least 50 mass%, 60 mass%, 90 mass%, of the yarn consists of gel-spun filaments consisting of ultra-high molecular weight polyethylene (UHMwPE) having an intrinsic viscosity (IV) of between about 8 and 40 all/g (para. 27).

Dirks fails to teach:

> Between 0.1 and 7.0 wt.%, between 0.3 and 5.0 wt.% and lower than 2.0 wt. % of an inorganic chromium oxide-containing pigment, a residual amount of