

Cornell University Invention Disclosure

Submit Completed Form To:

CORNELL RESEARCH FOUNDATION, INC.
20 Thornwood Drive, Suite 105
Ithaca, New York 14850 (or campus mail)
607-257-1081 FAX 607-257-1015
www.research.cornell.edu/crf

CRF ONLY:

Docket No. 2759
Technology No. EN747
Classification Code: _____
Date Received: _____

Title of Invention

Single step, high temperature GaN-Base Nucleation Process on Sapphire, SiC and Silicon Substrates

Brief Description of Invention

A single step process technique for the nucleation and subsequent epitaxial growth of GaN-based materials on mismatched substrates has been developed. The single flow, single pressure, high temperature process involves a surface treatment prior to epitaxial growth that allows complete coalescence of the epitaxial film within the first 200 Å of growth. This process eliminates the large temperature ramps and complex flow requirements of the commonly used two-step nucleation technologies.

PLEASE INCLUDE COPIES OF RELEVANT REFERENCES WITH THIS INVENTION DISCLOSURE

Sponsorship

US Government ☒	Commercial/Private _____	Cornell Univ. _____	Personal _____	Biotech _____	Other _____
Name of Sponsor <u>Office of Naval Research</u>		Sponsor's Contract No. <u>John Zolper</u>		Cornell Univ. Account No. <u>N00014-96-1-1223</u>	
<u>DARPA</u>		<u>BOB LEHENY</u>		<u>DARPA 63-C95-0121</u>	

Q: Was this invention developed using resources in the Theory Center or the Biotech Building? _____ (Y/N)

Collaborating Institution / Company/Organization

Organization	Principal Investigator Name	Address

Record of Invention

Date of Conception 12/31/97 Documented: Yes ☒ No ☐ Form system III run logs Location 20 Thornwood Drive, Ithaca
Invention Reduced to Practice: Yes ☒ No ☐ Date of First Reduction to Practice 12/31/97 Prototype Available: Yes ☐ No ☐

Publication(s)

Submittal: Date _____ Journal _____ Publication Date _____ ☐ Estimated ☐ Actual
Oral Disclosure: Date _____ Occasion _____ Handouts: ☐ Yes ☐ No
Poster presentation: Date made _____ Published abstract: ☐ Yes ☐ No Citation _____

D-2759
EN747

Commercial Interest

Company Name	Location	Contact Person	Title

Inventor Data (1)

Name Joseph A. Smart Campus Address/Dept. 20 Thornwood Drive, Electrical Engineering
 Home Address 153 Perrine Street Title PhD Student
 City /ZIP Auburn New York 13021 Citizenship USA Social Security No. [REDACTED]
 Email js80@cornell.edu Home Phone (315) 252-5830 Campus/Office Phone (607) 257-3257 FAX (607)257-3610

Inventor Data (2)

Name James R. Shealy Campus Address/Dept. Philips Hall
 Home Address 640 Highland Drive Title Professor
 City /ZIP Ithaca New York 14850 Citizenship USA Social Security No. -- -- --
 Email shealy@ee.cornell.edu Home Phone Campus/Office Phone FAX

Inventor Data (3)

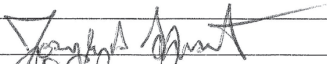
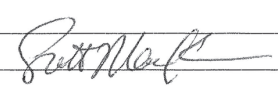
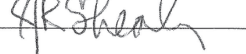
Name Campus Address/Dept.
 Home Address Title
 City /ZIP Citizenship Social Security No. -- -- --
 Email Home Phone Campus/Office Phone FAX

Name of Primary Contact: J.R. Shealy

Review / Approval (Optional Depending on Department Policy)

Dean / Chair /Director Name Signature Date

Inventor Signature(s): Per Cornell University Patent Policy, I (We) hereby assign all right, title, and interest in and to this invention to Cornell Research Foundation, Inc. ("CRF") and agree to execute all documents as requested to assign my (our) rights to CRF in and to any patent application or other statutory form of intellectual property protection filed on this disclosure, and to cooperate with CRF in securing protection of the disclosed invention. CRF will share any income derived from this invention with the Inventor(s) recorded hereon and the Inventor(s) department(s) according to its published policies.

Inventor Signature	Date	Witness Signature	Date
(1) 	<u>Oct. 5, 2000</u>		<u>10/5/00</u>
(2) 	<u>Oct 4, 2000</u>		<u>10/4/00</u>
(3) <u> </u>	<u> </u>		<u> </u>