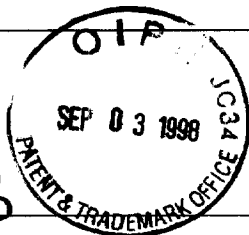


Form PTO-1595
1-31-92

09-16-1998

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

9-3-98



100829449

To the Honorable Commissioner of Patents and Trademarks:
Please record the attached original documents or copy thereof.

1. Name of the conveying party (ies):
Mariappan Paranthaman
Dominic F. Lee
Donald M. Kroeger
Amit Goyal
Additional name(s) of conveying
party (ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other _

Execution Date: 9-1, 1998

2. Name and address of receiving party (ies):

Name: Lockheed Martin Energy Research Corporation.

Internal Address: Post Office Box 2009

Oak Ridge, Tennessee 37831-8243

Street Address: 701 Scarboro Road

City: Oak Ridge

Additional name(s) & address (es) attached
☐ Yes ☒ No

4. Application number (s) or patent number (s): Application Serial Number: 09/096,559

If this document is being filed together with a new application, the execution date
of the application is: _____

A. Patent Application No.(s) Docket No. ERID 0467

B. Patent No. (s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom
corresponding concerning document
should be mailed:

J. Kenneth Davis, Agent for Applicants
Lockheed Martin Energy Research Corporation
Post Office Box 2009
Oak Ridge, Tennessee 37831-8243

6. Total number of applications
and patents involved:

1

7. Total fee (37 CFR 3.41)

\$ 40.00

- ☐ Enclosed
☒ Authorized to be charged to
deposit account

8. Deposit Account number: 13-1958
(Attach duplicate copy of this page
if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing instrument is true and correct and any attached copy is a true copy of the
original document.

J. Kenneth Davis

Name of Person Signing

J. Kenneth Davis
Signature

9-1-98

Date

Total number of pages including cover sheet, attachment and document:

4

PATENT
REEL: 9444 FRAME: 0494

ASSIGNMENT

WHEREAS, I, the below-named inventor whose residence and post office is as stated below, have invented certain new and useful improvements in an

**BUFFER LAYERS ON ROLLED NICKEL OR COPPER AS
SUPERCONDUCTOR SUBSTRATES**

for which an application for United States Letters Patent was executed by us on even date herewith, and

WHEREAS, LOCKHEED MARTIN ENERGY RESEARCH CORPORATION, a corporation of the State of Delaware, having an office at Scarboro & Bear Creek Rd., P.O. Box 2009, Oak Ridge, Tennessee 37831-8014, hereinafter called the ASSIGNEE, is desirous of acquiring the entire right, title and interest in the application and invention and to any Letters Patent that may be granted therefor in the United States of America and in any and all foreign countries.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby assign to ASSIGNEE the entire right, title and interest in the application and the invention, to all rights of priority thereto pursuant to the International Convention for the Protection of Industrial Property, and in any Letters Patent on the invention that may be granted in the United States of America and in any and all foreign countries, including any and all Letters Patent that are divisions, reissues, continuations, substitutions or extensions of any Letters Patent or applications therefor on the invention.

I hereby authorize and request the Commissioner of the United States Patent and Trademark Office and the officials of any and all foreign countries to issue any and all of said Letters Patent, when granted, to the ASSIGNEE.

Further, I hereby agree to communicate to said ASSIGNEE or its representatives any facts known to us respecting said invention, to testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, substitution, renewal and reissue applications, to execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, and to make all rightful oaths and generally do everything possible to aid said ASSIGNEE and its representatives to obtain and enforce proper protection for said invention in the United States of America and in any and all foreign countries.

I further agree that the terms, covenants and conditions of this assignment shall inure to the benefit of ASSIGNEE, its successors, assigns, and legal representatives, and shall be binding on us, our heirs, legal representatives, and assigns.

Full name of first inventor: Mariappan Paranthaman

Inventor's Signature: *Mariappan Paranthaman* Date: 8/31/98

Residence: 1117 OAK HAVEN RD KNOXVILLE, TN 37932
~~410 Virginia Road, Oak Ridge, Tennessee 37830~~ *DE*

Post Office Address: 1117 OAK HAVEN RD KNOXVILLE TN 37932
~~410 Virginia Road, Oak Ridge, Tennessee 37830~~ *DE*

Citizenship: India

State of Tennessee
County of Anderson

On this 31 day of August, 1998, before me, a Notary Public in and for the County and State aforesaid, Mariappan Paranthaman appeared before me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.

J. Kenneth Davis
J. Kenneth Davis, Notary Public
My commission expires 11-18-2000

SEAL

Full name of second inventor: Dominic F. Lee

Inventor's Signature: *Dominic F. Lee* Date: 8/31/98

Residence: 9028 Countrywood, Apt. D, Knoxville, Tennessee 37923

Post Office Address: 9028 Countrywood, Apt. D, Knoxville, Tennessee 37923

Citizenship: Hong Kong

State of Tennessee
County of Anderson

On this 31 day of August, 1998, before me, a Notary Public in and for the County and State aforesaid, Dominic F. Lee appeared before me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.

J. Kenneth Davis
J. Kenneth Davis, Notary Public
My commission expires 11-18-2000

SEAL

Full name of third inventor: Donald M. Kroeger

Inventor=s Signature: Donald M Kroeger Date: 8/31/98

Residence: 716 Villa Crest Drive, Knoxville, Tennessee 37923

Post Office Address: 716 Villa Crest Drive, Knoxville, Tennessee 37923

Citizenship: USA

State of Tennessee
County of Anderson

On this 31 day of August, 1998, before me, a Notary Public in and for the County and State aforesaid, Donald M. Kroeger appeared before me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.

J. Kenneth Davis
J. Kenneth Davis, Notary Public
My commission expires 11-18-2000

SEAL

Full name of fourth inventor: Amit Goyal

Inventor=s Signature: Amit Goyal Date: 8/31/98

Residence: 300 Walker Springs Road, Knoxville, Tennessee 37923

#19-E
Post Office Address: 300 Walker Springs Road, Knoxville, Tennessee 37923

Citizenship: India

State of Tennessee
County of Anderson

On this 31 day of August, 1998, before me, a Notary Public in and for the County and State aforesaid, Amit Goyal appeared before me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.

J. Kenneth Davis
J. Kenneth Davis, Notary Public
My commission expires 11-18-2000

SEAL