

**NC STATE UNIVERSITY**

Campus Box 7112  
Raleigh, NC 27695-7112

919.515.3201  
919.515.6835 (fax)

October 15, 2007

From:  
Mrs. Aranzazu Lascurain  
International Programs Coordinator

To:  
Dr. Brij K. Dhindaw  
Professor, Metallurgical and Materials Engineering  
Indian Institute of Technology  
Kharagpur-721302  
India

Dear Dr. Dhindaw,

I am pleased to inform you that the appropriate NC State University administrators have signed the MOU. Please find your original enclosed.

Best Regards



Aranzazu Lascurain

Enclosures

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN**  
**NORTH CAROLINA STATE UNIVERSITY**  
**ON BEHALF OF ITS COLLEGE OF ENGINEERING**  
**RALEIGH, NORTH CAROLINA**  
**UNITED STATES OF AMERICA**  
**AND**  
**INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR (IIT-KGP),**  
**INDIA**

In order to enhance the educational capabilities of each of the above institutions, it is proposed that collaborations and exchanges (the "Programs") be initiated in fields of common expertise and interest. North Carolina State University ("NC State") and the Indian Institute of Technology, Kharagpur ("IIT-KGP"), (together "the Institutions" or "Partners") intend to create the Programs through this Memorandum of Understanding ("MOU"). This MOU and the Programs created pursuant hereto are based on a spirit of cooperation, reciprocity, and of mutual benefit to both Institutions. The MOU is intended as the starting point for a Partnership to exploit the complementary nature of the strengths of research, teaching and enterprise and shall focus primarily on student and faculty exchanges, joint research and educational programmes and research contracts. It is envisaged that each institution will manage its own costs and will seek to share the benefits gained through the Partnership.

**PARTICIPATION AND COORDINATION**

The Partnership shall initially be between the following:

- For NC State:
  - College of Engineering
  - College of Physical and Mathematical Sciences
  
- For IIT-KGP:
  - Department of Physics
  - Department of Materials Science and Engineering
  - Electrical and Computer Engineering

Professor Jagdish (Jay) Narayan shall be the Coordinator from NC State and Professor M. Chakraborty shall be the Coordinator from IIT-KGP. The participants and Coordinators may change from time to time as decided by competent authority of the respective institutions.

## **GENERAL AREAS OF AGREEMENT**

1. Both Institutions agree to academic exchanges in various areas of education, research, and extension.
2. Both Institutions will make every effort to exchange faculty, scholars, and students, as well as educational, research, and extension materials appropriate to the areas of collaboration.
3. Specific details of exchanges noted above will be negotiated between the Institutions subject to the approval of each Institution.
4. This MOU will remain in effect for five (5) years from the date of signing, and is renewable thereafter for five (5) year terms subject to mutual consent. Either party may terminate this agreement by giving at least six (6) months notice in writing to the other party.
5. All background intellectual property used in connection with any collaboration activity shall remain the property of the party introducing such background intellectual property.
6. Any intellectual property rights which are created in the further development of and/or performance of any collaboration activity shall be determined by the terms of specific research agreements negotiated by the parties.
7. Subject to the governing law of each Institution's jurisdiction regarding public records, the Institutions agree not to use or disclose to anyone information belonging to the other Institution that is disclosed in connection with this MOU which is of a confidential nature and agree not to make any announcements of any nature in respect of this MOU without the consent of the other party hereto.

## **SPECIFIC AREAS OF COLLABORATION**

The following have been identified as possible starting points of the Partnership. The areas of cooperation can be further increased by the mutual consent. In many cases specific programs will require other agreements to be separately developed and documented.

- (1) Exchange of information and experience: Representatives of the Partners should arrange joint meetings at least once per year to exchange experiences in education and research and to prepare joint projects. A joint Seminar/Workshop may be held once in two (2) years to present the results of this Partnership. These meetings and seminars will be held subject to availability of finances to meet travel and other incidental expenses.

(2) Faculty and student exchange programs: The Partners will examine the possibility of creating one (1) or two (2) Visiting Faculty positions at the respective Institutions for faculty exchange. A Student Exchange Program will be formulated both for short term (like summer/winter training or short certificate courses) as well as for semester-wise registration (only for M.Tech, M.S. & Ph.D students). A detailed Agreement on this (including credit transfer issues) will be examined and prepared. The highest academic bodies of the institutions will ratify this agreement before the faculty or student exchange program starts.

(3) Cooperative research projects: The Partners will define joint collaborative research projects between faculty and/or research groups. Collaborating faculty will approach various funding agencies to submit joint project proposals. Focus will be given to industry-funded projects and those funded by international agencies. The partners will enter into research agreements for each research project.

(4) Coordinated graduate degree program: A joint integrated MS/PhD program with stress on research in areas of mutual interest will be explored and formulated. The highest academic bodies of the institutions will ratify this agreement before this program starts.

(5) Continuing and distance education: IIT-KGP and NC State will formulate a joint distance education program based on the expertise available in both Institutions. The Institutions will also share and carry out joint research in technology for distance and computer-based learning.

**North Carolina State University**

Signature: L. Nielsen  
Dr. Larry A. Nielsen  
Provost and Executive Vice Chancellor

Date: 10/11/07

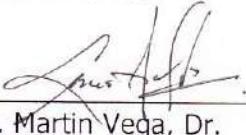
**Indian Institute of Technology  
Kharagpur, India**

Signature: M. Chakraborty  
Dr. Madhusudan Chakraborty  
Deputy Director

Date: 18/09/2007

**Prof. M. Chakraborty**  
Deputy Director  
Indian Institute of Technology  
Kharagpur-721302

College of Engineering  
North Carolina State University  
United States of America

Signature:   
Dean Louis A. Martin Vega, Dr.

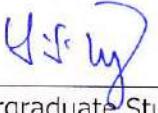
Date: 9/15/07

College of Physical and Mathematical Sciences  
North Carolina State University  
United States of America

Signature: Daniel L. Solomon  
Dean Daniel L. Solomon, Dr.

Date: 9/27/07

Faculty of Engineering  
Indian Institute of Technology  
Kharagpur, India

Signature:   
Dean of Undergraduate Studies  
Professor B.S. Sastry

Date: 18 Sept 07  
DEAN

Undergraduate Studies  
I.I.T, Kharagpur  
Faculty of Sciences  
Indian Institute of Technology  
Kharagpur, India

Signature:   
18.09.07  
Dean of Postgraduate Studies &  
Research  
Professor S.K. Satsangi

Date: \_\_\_\_\_

DEAN  
Postgraduate Studies & Research  
I.I.T, Kharagpur

**Director, IIT Kharagpur**

**From:** "Ross Bassett" <rkbassett@gmail.com>  
**To:** <director@iitkgp.ernet.in>; <skdube@iitkgp.ernet.in>  
**Sent:** 25 June 2007 16:48  
**Subject:** Visit to IIT Kharagpur

Dear Director Dube,

I am planning on being in the Kolkata area the week of July 2 to July 7. Right now I am going to be staying in Kolkata the first part of the week. I was planning to take the train to Kharagpur on July 2nd and stay for the day and then come out July 5th and stay over until July 6th. Would it be possible to have a guest house accommodation for the night of July 5th? Would it be possible to use the IIT Kharagpur library during my time there?

Thank you very much.

Ross Bassett

*from North Carolina*

*Kindly do the needful, as desired  
by the Director.*

*Rey 02/07/2007*

*Dear (AA&IR) please.*

**Prof. A. Chakraborty**

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**From:** "Tapan Kumar Nath" <tnath@phy.iitkgp.ernet.in>  
**To:** <deanaa@hiji.iitkgp.ernet.in>  
**Sent:** Friday, June 29, 2007 4:29 PM  
**Attach:** MOU Agreement IIT Kh.doc  
**Subject:** From Dr. T. K. Nath regarding MOU with NCSU, USA

Dear Prof. Chakraborty,

I am forwarding the e-mail which I received from Prof. Narayan (NCSU, USA) regarding setting up a MOU between IIT Kharagpur and NCSU, USA.  
Please find attached herewith the MOU format received from NCSU, USA.

Please look into the matter.

Thanking you.

Sincerely yours,

Dr. T. K. Nath

Forwarded to

MOU subcommittee for consideration

Jay Nath

17-7-07

Prof. A. Chakraborty

**From:** "Tapan Kumar Nath" <tnath@phy.iitkgp.ernet.in>  
**To:** <deanaa@hiji.iitkgp.ernet.in>  
**Sent:** Monday, July 16, 2007 1:31 PM  
**Attach:** NCSU-IIT Kharagpur final MOU.doc  
**Subject:** Re: Fw: Reserach and Academic exchange (fwd)

Chairman, MOU Committee

Dear Prof. Chakraborty,

Please find attached herewith the revised MOU form from Prof. J. Narayan of NCSU, USA. Kindly go through it and please take necessary action so that the MOU between NCSU and IIT Kharagpur can be started as soon as possible.

Thanking you.

With best regards,

Sincerely yours,

Dr. T. K. Nath

\*\*\*\*\*

Dr. T. K. Nath URL:<http://www.iitkgp.ac.in/departments/>  
 Asst. Professor  
 Dept. of Physics & Meteorology  
 Magnetism & Magnetic Materials Laboratory  
 IIT Kharagpur  
 721302, W.B.  
 Ph.: +91-3222-283862 (O), 283863 (R), +91-3222-220221 (R)  
 Mobile: 9932952097  
 e-mail:tnath@phy.iitkgp.ernet.in, [tapnath@gmail.com](mailto:tapnath@gmail.com)

\*\*\*\*\*

----- Forwarded message -----

Date: Wed, 11 Jul 2007 15:23:27 -0500  
 From: J Narayan <[j\\_narayan@ncsu.edu](mailto:j_narayan@ncsu.edu)>  
 To: Tapan Kumar Nath <[tnath@phy.iitkgp.ernet.in](mailto:tnath@phy.iitkgp.ernet.in)>  
 Subject: Re: Fw: Reserach and Academic exchange

Dera Tapan: Please take a look at this MOU and fill in the blanks, and send it back to me ASAP, after discussions with Dr. Chakraborty. We need parallel signatures to Dean of Engineering and Dean of Sciences. I have a project with NSF on Novel ZnO based Electrodes for High Efficiency Solar Cells. We can get additional funding from NSF for you to come here, and you can a parallel project from DST. Please see our latest papers on this in APL and JAP. Please give my best regards to Professor Madhusudan Chakraborty.

Best wishes,

Jagdish (Jay) Narayan

The John C. C. Fan Family Distinguished Chair in Materials Science  
 Distinguished University Professor and Director

NSF Center for Advanced Materials and Smart Structures  
Department of Materials Science and Engineering  
EB I, Suite 3030, Centennial Campus  
North Carolina State University  
Raleigh, NC 27695-7907.  
T: (919) 515-7874; Fax: (919) 515-7642  
E-mail: J\_NARAYAN@NCSU.EDU

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN**  
**NORTH CAROLINA STATE UNIVERSITY**  
**ON BEHALF OF ITS COLLEGE OF ENGINEERING**  
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**AND**  
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various funding agencies to submit joint project proposals. Focus will be given to industry-funded projects and those funded by international agencies.

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Provost and Executive Vice Chancellor

North Carolina State University

Signature: \_\_\_\_\_  
Dr. Larry A. Nielsen

Date: \_\_\_\_\_

College of Engineering  
North Carolina State University  
United States of America

Signature: \_\_\_\_\_  
Dean Louis A. Martin Vega, Dr.

Date: \_\_\_\_\_

College of Physical and Mathematical Sciences  
North Carolina State University  
United States of America

Signature: \_\_\_\_\_  
Dean Daniel L. Solomon, Dr.

Date: \_\_\_\_\_

Deputy Director

Indian Institute of Technology  
Kharagpur, India

Signature: \_\_\_\_\_  
Dr. Madhusudan Chakraborty

Date: \_\_\_\_\_

Faculty of Engineering  
Indian Institute of Technology—  
Kharagpur, India

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Faculty of Sciences  
Indian Institute of Technology—  
Kharagpur, India

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

OFFICE OF THE DEPUTY DIRECTOR  
I.I.T., KHARAGPUR

Dated: 11.06.2007

A meeting of the MOU Senate Sub-Committee was held on 11.06.2007 at 04.00 p.m. in the office of the Deputy Director. The following members were present:

Prof. P. P. Chakraborty, Dy. Director (Actg.) – in Chair  
Prof. S. K. Satsangi, Dean (PGS&R)  
Prof. B. S. Sastry, Dean (UGS)  
Prof. A. Chakraborty, Dean (AA&IR)

The following MOU's were discussed for consideration.

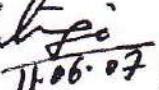
1. Agreement for teaching and scientific cooperation between Technische Universität Dresden (Germany) and Indian Institute of Technology, Kharagpur.
2. MOU between L.C. Smith College of Engineering and Computer Science, Syracuse University (LCS-RU) and IIT, Kharagpur.
3. Cooperation agreement for the hosting of young Indian Researchers Between the University of Padova Italy and IIT Kharagpur.

The decision are as follows:

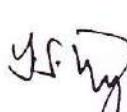
1. TU-Dresden – IIT, Kharagpur: Our format be sent to Prof. Niloy Ganguly by Dean (AA&IR). Also some focused areas be identified for the cooperation before MOU can be signed.
2. L C Smith College of Engineering , Syracuse University and IIT Kharagpur – The MOU is in our standard format and is agreeable in principle. However, as per our norms our Dean (AA&IR) will sign since the other counterpart is dean of LCS-SU. Moreover, it is advisable to sign the MOU only after some focused areas of cooperation are identified.
3. University of Padova Italy and IIT, Kharagpur – We have already signed similar agreements with other Italian Universities undo Indo-Italian Fellowship programme. This may be agreed in this case.

  
(S. K. Satsangi)

Dean (PGS)

  
(A. Chakraborty)

Dean(AA&IR)

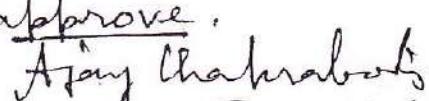
  
(B S Sastry)

Dean (UGS)

  
(P P Chakraborty)

Dy. Director (Actg.)

DIRECTOR may kindly approve.

  
Ajay Chakraborty

11.6.07

~~DIRECTOR~~

  
B. S. Sastry  
11.06.07