

Short Term Course  
On  
**'Engineering & Materials for Sustainable Development'**

Venue  
**Seminar Hall,  
Department of Electrical Engineering  
Jadavpur University**

**(27<sup>th</sup> January - 2<sup>nd</sup> February), 2017**



*Organized by*



**Global Change Programme  
Jadavpur University, Kolkata-700032**

*Under*

**Global Initiative of Academic Networks (GIAN)  
MHRD, Government of India**

# Engineering & Materials for Sustainable Development

## 1. Overview

In the context of technology led development discourse current focus is on sustainable development goals and how technology development, deployment and diffusion can be compatible with social, economic, political sustainable development agenda. New engineering practices and materials development are considered as major breakthrough to advance sustainable development in global discourse. In developing countries besides technology development, technology transfer is also reckoned as a very important strategy for leapfrogging and fast catching up with sustainable development goals. However, in this context apart from technology development and deployment adequate training/ capacity building for making things happen on the ground and for advance of it in future is very urgent. New technology led sustainable development, besides industry sector, cuts across all other sectors. Hence, capacity building is necessary for fresh engineering graduates, on-job engineers, managers and company executives so that frontiers of technology and materials for sustainable development become mainstreamed.

**Global Change Programme (GCP)** at **Jadavpur University** [[juglobalchangeprogram.org](http://juglobalchangeprogram.org)] has been working on these issues for over last ten years in collaboration with internationally acclaimed Universities, research institutes, academics, researchers and practitioners with long term exposure, experience, and proven teaching, research, and training in the proposed field. The course proposed under **Global Initiative of Academic Networks (GIAN)** scheme of **MHRD, Government of India** is planned and will be offered as per the norms.

The primary objectives of the course are as follows:

- ✓ *Exposing participants to the fundamentals of sustainable development discourse and evolving paradigm*
- ✓ *Exposing participants to new emerging materials and application in various fields*
- ✓ *Providing exposure to practical problems and their solutions, through case studies (some currently ongoing projects) in the field of water access, energy access and waste management in Indian context*
- ✓ *Enhancing the capability of the participants to identify, control and remove unsustainability in current practices in the said fields*

## 2. Course Details

<b>Duration</b>	<b>15 hours (over 5 Days) (27<sup>th</sup> January to 2<sup>nd</sup> February, 2017) (5:00-8:30) p.m.</b>
<b>Venue</b>	<b>Seminar Hall, First Floor, Department of Electrical Engineering, Jadavpur University</b>
<b>Lectures topics according to hours of lectures</b>	<b>1. Sustainable Development-Challenges and Opportunities – Theory (3 hours)</b> <b>2. New Materials and Material Efficiency (3 hours)</b> <b>3. Technology Innovation for Sustainable Water Access (3 hours)</b> <b>4. Technology Innovation for Sustainable Energy Access (3 hours)</b> <b>5. Technology Innovation for Sustainable Waste Management (3 hours)</b>
<b>Who can attend</b>	<ul style="list-style-type: none"><li>• <b>Policy makers, executives, engineers and researchers</b> of energy services and government organizations including R&amp;D laboratories.</li><li>• <b>Post graduate students</b> at all levels (<b>M.Sc./M.Tech/Ph.D</b>) or <b>Faculty members</b> from reputed academic institutions and technical institutions.</li></ul>
<b>Registration Fees:</b>	<b>A. Participants from India</b> <ul style="list-style-type: none"><li>• <b>For Students and Research Scholars: Rs. 250/-</b></li><li>• <b>For Faculty Members: Rs. 500/-</b></li><li>• <b>For professionals from Industry/Research Organization: Rs.2,500/-</b> (all inclusive except accommodation)</li></ul> <b>B. Participants from abroad: US\$ 100/-</b> <i>(Note: i) All payments are to be made in favour of “Registrar, Jadavpur University” as DD/Bankers’ Cheque, payable at Kolkata.</i> <i>ii) Any accommodation cost will be paid by the participants in actual. Arrangements can be made by the organizers with sufficient prior notice from the participants.)</i>

### 3. The Faculty



**Prof. (Dr.) Joyashree Roy**, ICSSR national fellow, is currently the **Professor of Economics at Jadavpur University**, Kolkata in India. She initiated and also coordinates the Global Change Programme and Ryoichi Sasakawa Young Leaders Fellowship Fund Project on “Tradition, Social Change, and Sustainable Development: A Holistic Approach” at Jadavpur University. She was a Ford Foundation Post Doctoral Fellow in Environmental Economics at the Lawrence Berkeley National Laboratory, California, USA. She is one of the two Coordinating Lead Authors of the Industry chapter of the (IPCC) Inter-Governmental Panel on Climate Change (*AR4*, *AR5*). Her research interests include Economics of Climate Change, modeling energy demand, economy-wide modeling exercises for deriving policy implications, water quality demand modeling, water pricing, urban infrastructure development policy issues, sustainable indicator estimation, natural resource accounting, valuing environmental services, and developmental and environmental issues relevant for informal sectors, Coastal Ecosystem service evaluation etc.



**Dr. Susan Amrose** is a program director at LIGTT and a **Project Scientist and Lecturer in Civil and Environmental Engineering at the University of California, Berkeley**. At UC Berkeley, Susan heads the water program at the Gadgil Lab for Energy and Water Research and played a key role in the development of ECAR technology to affordably remove arsenic from drinking water in rural South Asia. She continues to work on the ECAR scale-up effort in West Bengal, India and manages ongoing projects in fluoride and brackish water treatment in East Africa and North India. Susan is co-founder and CSO at *SimpleWater* working to commercialize ECAR technology for small water systems in rural US communities. Susan recently won the 5th Prince Sultan bin Abdulaziz International Prize in Water, and has received a Siemen's Stiftung Empowering People Award, Chancellor's Public Service Award, the Electrochemical Society's Daniel Cubicciotti Award, the William L. Williams Prize, and the Elsa L. Haller Philosophy Prize. Susan received a PhD and MA in Physics from the University of California, Berkeley, and holds a BA in Physics and Philosophy from the University of Michigan, Ann Arbor.



**Dr. K.K. Chattopadhyay** is a **Professor in the Department of Physics, Jadavpur University**, Kolkata, India. He is also the Director of the School of Materials Science and Nanotechnology and coordinator of the Nanoscience and Technology programme of Jadavpur University. He had taken his Master degree in Physics from the University of Calcutta and obtained Ph.D. degree by working at the Indian Association for the Cultivation of Science from Jadavpur University in 1993. He has done his postdoctoral work in the National Institute of materials Science (NIMS), Japan. His current field of research interest includes P-type transparent conducting metal oxides, transparent electronics, carbon nanostructure, metal oxide nano-structured materials including their applications and density functional theory. Prof. Chattopadhyay has published over 270 research papers in different international journals of repute and also published a large number of papers in the proceedings of international conferences. He is the recipient of various awards and scholarships including Japan Society for Promotion of Science (JSPS), Centre of Excellence (COE) postdoctoral fellowship, Govt. of Japan, American Chemical Society (ACS) membership award.



**Dr. Biswanath Roy** did his B.Sc and M.Sc from Department of Applied Physics, University of Calcutta in the year 1989 and 1993 respectively. He successfully completed his Ph.D from Jadavpur University in the year 1999. Dr. Roy is presently **Professor of Illumination Engineering of Department of Electrical Engineering, Jadavpur University**. He has got his expertise in the field of Electrical Energy Audit, Lighting Survey & Audit and Lighting Design.



**Dr. Anupam Debsarkar** did his B.C.E, M.C.E, and Ph.D from Jadavpur University in the year 1994, 1997 and 2010 respectively. He started his professional career as Assistant Environmental Engineer in West Bengal Pollution Control Board in the Year 1998. Dr. Debsarkar is presently **Associate Professor of Environmental Engineering Division of Department of Civil Engineering, Jadavpur University**. He has in his credit of publishing total 91 technical papers in national and international journals and conferences. His areas of research interest are Water and Wastewater Treatment, Air and Noise Pollution and Industrial Waste Management.



**Dr. Amit Dutta** did his B.C.E and M.C.E from Jadavpur University in the year 1991 and 1994 respectively. He successfully completed his Ph.D from IIT-Kharagpur in the year 2002. He has an industrial experience of 7 years as Senior Design Engineer in reputed consultancy firms. Dr. Dutta is presently **Associate Professor of Environmental Engineering Division of Department of Civil Engineering, Jadavpur University**. He has in his credit of publishing total 31 technical papers in national and international journals and conferences. His areas of research interest are Water Treatment, Solid Waste Management and Industrial Waste Management.

### Course Coordinators:

**Dr. Anupam Debsarkar**  
*Associate Professor,  
Department of Civil Engineering,  
Jadavpur University,  
188, Raja, S.C. Mallik Road  
Kolkata: 700032  
Tel: +91 33 2457 2815 (Office)  
+91 98300 09708 (Mobile)  
Email: anupamju1972@gmail.com*

**Prof. (Dr.) Biswanath Roy**  
*Professor,  
Department of Electrical Engineering  
Jadavpur University,  
188, Raja, S.C. Mallik Road  
Kolkata: 700032  
Tel: +91 33 2457 2886 (Office)  
+91 98309 68881 (Mobile),  
Email: [bwnroy@gmail.com](mailto:bwnroy@gmail.com), [broy@ee.jdvvu.ac.in](mailto:broy@ee.jdvvu.ac.in)*

## **Registration Form:**

Kindly register through e-mail (Please enclose the duly signed & forwarded scan copy of this form) or in person at the following address with following details:

### **Registration Format**

1. Name: \_\_\_\_\_

2. Designation: \_\_\_\_\_

3. Department: \_\_\_\_\_

4. Affiliation: \_\_\_\_\_

5. Contact Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. Phone No: \_\_\_\_\_

7. Mobile No: \_\_\_\_\_

8. E-Mail: \_\_\_\_\_

**Signature**

**Signature with Stamp**

**(Applicant)**

**(Forwarding Authority)**

Date:

**[Due to limited seats, the interested participants are requested to register on and before 15<sup>th</sup> January, 2017 along with registration fees, as applicable]**