

INTERNATIONAL TRAINING WORKSHOP
ON
INDUSTRY 4.0 AND ENERGY MANAGEMENT

January 19-20, 2022
(A VIRTUAL EVENT)

ORGANISED BY

	<p>SOCIETY OF ENERGY ENGINEERS AND MANAGERS (SEEM) INDIA</p>
	<p>CENTRE FOR SCIENCE & TECHNOLOGY OF THE NON-ALIGNED AND OTHER DEVELOPING COUNTRIES (NAM S&T CENTRE) NEW DELHI, INDIA</p>

Introduction

The global manufacturing sector has witnessed various industrial revolutions. Currently in the fourth industrial revolution phase, high technological production strategies blended with intelligent decision support system, take the sector to new heights of productivity.

The principle of Industry 4.0, unlike the traditionally hierarchical and centralized manufacturing system, exhibits a decentralized architecture in which autonomous industrial components connect with one another. These autonomous components interact among themselves with a connected *Decision Support System (DSS)* to self-diagnose and self-respond in the overall manufacturing scenario. The technologies that are incorporated for the decision-making are the Internet of Things (IoT), Cloud Computing, and Big Data. The overall framework of these technologies is connected under a common platform called *Cyber Physical System (CPS)*. CPS is a backbone of Industry 4.0, where the physical world and virtual space are linked for a live communication environment of the shop floor. CPS provides a live digital copy of industrial assets and processes. The robust analytical decision-making system utilizes the real data captured from the various sensor devices attached to industrial physical environment. In the near future, inequalities between the economic developments of industrialized, emerging economies and developing countries could further deepen, if all countries cannot tap into digital development benefits.

Energy availability, reliability and manageability are essential ingredients of energy-critical buildings and manufacturing processes in the scope of Industry 4.0. This is driven by a mix of environmental factors, cost challenges, regulations, proactive energy consumption capabilities and the integration of alternative sources of energy in the energy mix. Industry 4.0 requires innovative technological solutions capable of limiting energy waste and providing real-time control over consumption. In short, without energy management, there is no Industry 4.0.

To keep abreast of the growing significance of Industry 4.0, to deliberate upon the role of energy management in Industry 4.0, and to impart skills and knowledge on the principles and practices of energy management for emerging manufacturing processes and premises in future, **the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre)** jointly with the **Society of Energy Engineers and Managers (SEEM), India** is organizing a two days **International Training Workshop** on **'Industry 4.0 and Energy Management'** during **January 19-20, 2022** The Workshop will be held in *Virtual Mode*.

Objectives of the Training Workshop

The Training Workshop intends to provide basic knowledge on the subject through interactive lectures about various aspects of the Industry 4.0 framework and explore the disruptive management practices of Industry 4.0 with various opportunities and challenges of the energy management in Industry 4.0 era.

Topics to be Covered

The Training Workshop will cover the following:

- State of the Art for Industry 4.0
- Industry 4.0: Concepts, Technologies and Challenges for Developing Countries
- Reactive to Proactive Maintenance through IoT

- Industry 4.0 and Sustainable Energy
- Driving Energy Efficiency through the Industry 4.0 Approach
- Energy Management for Industry 4.0 -Technology and Products

Important Dates

Date of the Program	19-20 January 2022
Submission of Application Starts	15 November 2021
Last Date for Submission of Application	05 January 2022
Last Date for Submission of Full Manuscript	10 January, 2022
Confirmation to Selected Applicants and Communication of Virtual Platform Details (Link)	12 January 2022

Programme

A tentative program of the event is given below:

Programme (IST: GMT + 5.30hrs.)	TOPICS	
	19 January 2022	20 January 2022
10:00-11:00 AM	Inauguration	Industry 4.0 and Sustainable Energy
11:00 AM-12:00 PM	State of the Art for Industry 4.0	Driving Energy Efficiency through Industry 4.0 Approach
12:00-1:00 PM		
1.00-2.00 PM	Break	
2.00-3.00 PM	Industry 4.0: Smart Manufacturing Concepts, Technologies and Challenges for Developing Countries	Energy Management for Industry 4.0 - Technologies and Products
3.00-4.00 PM		
4.00-5.00 PM	Reactive to Proactive Maintenance through IoT	Concluding Session, Discussion and Feedback

A final *Session-wise Programme* will be made available before the Workshop.

The Participants of the Virtual International Training Workshop will receive a Participation Certificate electronically.

About the Organisers

NAM S&T CENTRE

The *Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre; www.namstct.org)* is an Inter-Governmental Organisation with a Membership of 47 countries spread over Asia, Africa, Middle East and Latin America. The Centre was set up in 1989 in New Delhi, India based on decisions taken during various NAM Summits and mandated to undertake a variety of programmes, including organisation of workshops, symposiums and training courses and implementation of collaborative projects. It also offers short-term *Research Fellowships* to scientists from developing countries in association with the *Centres of Excellence* in various countries. The Centre also brings out technical books, monographs and other scientific publications in different S&T subjects of interest to developing countries. The Centre's activities provide opportunity for scientist-to-scientist contact and interactions; familiarizing participants on the latest developments and techniques in the subject areas; identification of the requirements of training and expert assistance; locating technologies for transfer between the Members and other developing countries, and dissemination of S&T information etc. In addition, the Centre encourages Academic-R&D-Industry interactions in the developing countries through its "*NAM S&T-Industry Network*".

SOCIETY OF ENERGY ENGINEERS AND MANAGERS (SEEM)

Society of Energy Engineers and Managers (SEEM), India is the national professional body of Certified Energy Managers, Auditors and Energy Professionals in India. SEEM has 15 chapters and 7 centers, spread over 22 states and is engaged in delivering networking and skill development opportunities to its members, by organizing training programs, workshops, etc. SEEM works to help industries achieve the important goal of realizing energy efficiency, choosing the right service that gives the best possible outcome from energy audits, and engaging in meaningful discussions to achieve industrial energy efficiency targets. To share knowledge, insights and case studies from other industries, experts and agencies from India and abroad, SEEM also publish a quarterly print magazine 'Energy Manager'.

Participants

Researchers, scientists, technocrats, innovators, government officials and policy makers, legal experts, and representatives from industry and non-government organizations - who are engaged in the field of Technology, Industry and Energy, are invited to participate in this Virtual Training Workshop. The combination of participants from various developing countries will allow for exchange of knowledge, ideas and experiences as well as opportunities for global networking and collaboration.

English will be the official language of the programme.

Resource Persons

The resource persons for the Training Workshop will comprise eminent experts and professionals in the relevant fields from India and abroad.

Submission of Application

Experts and scientists desirous of participating in the Training Workshop, *excepting those from India*, are required to submit their application **electronically** to the NAM S&T Centre (namstcentre@gmail.com) as early as possible, latest by **5th January 2022**.

Applicants from India should, however, submit their requests directly to the SEEM, India.

The following documents must be submitted as e-mail attachments:

- a) Filled in Nomination Form (Blank form **enclosed**)
- b) Opinion (a short paragraph; **in MS-Word format**) how you qualify to participate in the Training Workshop
- c) A short CV (**maximum two pages; in MS-Word format**) [Format **Enclosed**]
- d) **An Extended Abstract** (in MS-Word only) of the Paper that would be presented at the Training Workshop

Note: The documents at (ii), (iii) and (iv) above must be in **MS-Word format** only; PDF or image files will not be accepted. Hard copies of the Application Form and the above attachments are **NOT REQUIRED** to be submitted.

Presentation of Papers

Delegates / Participants are expected to present a Country Status Report and / or a research/ scientific paper on any of the themes appropriate to the Training Workshop.

Publication of Proceedings of the Training Workshop

A publication edited by one or more international experts and based on the papers presented by the participants during the Workshop and also containing papers contributed by eminent experts in the field will be brought out in the form of a book as follow up of this program. Therefore, all participants are requested to submit the manuscripts of their full papers in MS-word format well in advance, but latest by **10th January 2022**.

Selection of Applicants

Selection of applicants will be made based on their academic and professional background. Successful applicants will be electronically informed about their selection by **12 January 2022**.

The details about the virtual platform that will be used for the Training Workshop and *log-in details* for joining the program will also be communicated to the selected applicants. Other details and terms & conditions for the participation of scientists from various countries will be given to the individual candidates on receipt of their applications.

CONTACT DETAILS

NAM S&T CENTRE

Dr. Amitava Bandopadhyay

Director General

Centre for Science & Technology of the Non-Aligned and other Developing Countries
(NAM S&T Centre)

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Tel: +91-11-24645134, 24644974; **Fax:** +91-11-24644973

E-mail: namstcentre@gmail.com

Website: <http://www.namstct.org>

SEEM

Dr. C. S. Azad

General Secretary

Society of Energy Engineers and Managers

SEEM Bhavan, KRA A79, Kannammoola, Trivandrum, Kerala, India - 695011

Tel: +91471 – 2557607

E-Mail: seemhq2011@gmail.com

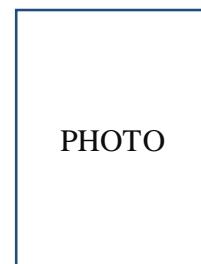
Website: www.seemindia.org

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APPLICATION FORM

PLEASE TYPE OR USE BLOCK CAPITALS (NO COLUMN SHOULD BE LEFT BLANK)



SECTION –A (*To be filled in by the Nominee*)

1. First Name (Prof. /Dr. /Mr. /Mrs. /Ms.):
Middle Name: Last Name:
2. Father's / Spouse Name:
3. Designation (Position held):
4. Nationality:
5. Date of Birth:
Place of Birth (City) (Country).....
6. Name of the Parent Institution (Employer):
7. Full Address (Office):
.....
.....
Phone: Fax:
E-mail:
Full Address (Home):P
.....
Home: Mobile:
Fax: E-mail:
8. Educational Qualifications:
Highest Degree: Year of Award:
University:
Field of Study.....

9. Brief Biodata (CV):

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(Maximum two pages in MS Word only; to be attached on a separate sheet as per the attached format)

- 10. A Write-up (in MS-Word format only) on what qualifies you to attend the Workshop
- 11. An Extended Abstract (in MS-Word only) of the Paper that would be presented at the Workshop

Date:

Signature:

SECTION –B: ENDORSEMENT BY THE NOMINATING AUTHORITY

(The Applicant in a member country of the NAM S&T Centre must get the Nomination Form endorsed by the Focal Point of the Centre in his/her country if he/she wishes to take advantages extended to the official nominee of the country. For the list of member countries and names/ addresses of the Focal Points please visit the Centre’s official website; www.namstct.org.)

Signature:

Name (in full):

Designation:

Date:

SEAL

Enclosures:

- 1) A Brief CV (maximum two pages, as per **attached** format; in MS Word only)
- 2) An Opinion (in MS-Word format only) on what qualifies you to attend the Workshop
- 3) An Extended Abstract (in MS-Word only) of the Paper that would be presented at the Workshop

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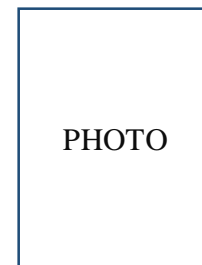
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CURRICULUM VITAE

1. Personal Details:

Name: (Prof./Dr./Mr./Mrs./Ms.)
Designation: Position Title
Present Employer: Full Address (Office)
City/State/Province:
Country:
Nationality:
Date of Birth: dd/mm/yyyy
Proficiency in English Language:
Permanent Address: Full Address (Home)
Gender:
Contact: Mobile:
Telephone Office: Fax:
E-mail: Alternative e-mail:



2. Academic Qualifications: In chronological order

Qualification Awarded Degree/Diploma/Certificate	Major Subject	University/ Institution	Year (From-To)

3. Professional Experience: In chronological order

Organisation/ Institution	Position Title	Year (From-To)	Nature of duties

Total number of years of relevant experience –

4. Research Experience: In chronological order

Research Title	Duration	Status

5. Administrative Experience: Not more than 100 words

6. Experience with respect to the title of the Workshop:

7. Details of Awards/Recognitions (if any):

8. Any other information: Not more than 50 words

9. Recent Publications: Only five recent publications to be mentioned
