

INTERNATIONAL WORKSHOP

ON

**Renewable Energy and Storage Devices for
Sustainable Development**

(IWRESD - 2021)

(@ VIRTUAL PLATFORM)

12th – 14th January 2021

JOINTLY ORGANISED BY



**AMITY INSTITUTE OF
ADVANCED RESEARCH AND
STUDIES (MATERIALS &
DEVICES), AMITY
UNIVERSITY
UP, INDIA**

&



**CENTRE FOR SCIENCE AND
TECHNOLOGY OF THE NON-
ALIGNED AND OTHER
DEVELOPING COUNTRIES
(NAM S&T CENTRE)
NEW DELHI, INDIA**

INTRODUCTION

The *Sustainable Development Goal (SDG) - 7* is a universal call for clean and affordable energy for all nations and for every person on Earth. The increasing population pressure and demand for a better life style have necessitated a need for greater use of energy. This has resulted in mounting pressure on the use of available resources which is now mostly met by fossil fuels. The rate of energy consumption is much higher than it was ever before and the demand is on the rise. There is a negative balance between source depletion and replenishment by natural processes. The use of fossil fuels as the world's dominant energy supply is damaging the environment and causing changes in global climate patterns. Fossil fuels are also a finite resource, and the current situation is, therefore, unsustainable. Therefore, use of alternative methods of energy supply is inescapable. Energy sustainability can only be realized through an inter-relationship between growing economies, the need for environmental protection and increased social responsibilities in order to provide an improved quality of life for current and future generations.

The global demand is to increase the share of the renewable energy in the total capacity of the energy generation. Few companies are also planning to have complete replacement of the conventional sources by other sources, during their long-term planning. Investing in sustainable energy is a smart strategy for growing markets, improving competitiveness, and providing greater equity and opportunity. The promise of renewable energy can only be realized through significant investments in research and development on alternative, sustainable technologies such as solar, biomass, wind, hydropower, geothermal power, ocean energy sources, solar-derived hydrogen fuel, and the energy storage technologies necessary to operate them competitively. Investigations are also required for new materials, processing technologies, instrumentation, and many other packaging materials, which are cost effective and can provide clean electricity to the common people. Indeed, the transition to sustainable energy may well be the biggest business opportunity of the 21st Century.

In order to deliberate on the current trends in clean energy generation, its storage, harnessing and policy related issues, the *Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre)* jointly with the *Amity Institute of Advanced Research and Studies (Materials and Devices) [AIARS (M&D)]*, **Amity University**, NOIDA (adjoining New Delhi), India, announces the organisation of an '**International Workshop on Renewable Energy and Storage Devices for Sustainable Development (IWRESD-2021)**' during **Tuesday, 12th – Thursday, 14th January 2021**. The Workshop will be held **in Virtual Mode**.

OBJECTIVES

The Workshop intends to:

- Provide a platform and an opportunity to deliberate on the clean and sustainable energy conversion, processing technologies, instrumentations, modeling and simulation and engineering of various renewable energy sources including the small solar energy generation plants and about distribution of electricity.
- Discuss all issues from tailoring of materials processing technologies to manufacturing of clean energy power plants.
- Discuss off-grid and integration with grid for the distribution of electricity.
- Deliberate on various issues on the sustainable solutions for clean energy.
- Deliberate on small solar plants as well as major solar power plants, and to discuss the solar thermal energy storage techniques and systems.
- Discuss the current status and scenario for utilization of renewable energy for building up future framework to meet *Sustainable Development Goal - 7(SDG-7)* by 2030.
- Adopt a Resolution with recommendations on policies and strategies for NAM and other developing countries on increased investment for generation, harvesting and utilization of clean, sustainable and renewable energy.

TOPICS TO BE COVERED

- ❖ New investigations in Solar Photovoltaics
- ❖ Novel materials and processing technologies
- ❖ Roof-top and Grid-Integrated Solar Energy Power Plants
- ❖ Latest studies in Wind, Biofuel, Geothermal, Micro-hydel, Tidal and any other clean and sustainable energy.
- ❖ New emerging technologies for clean energy generation
- ❖ Energy storage materials and systems
- ❖ Instrumentation for clean energy systems
- ❖ Solar thermal systems for water heating, room heating, cooling and industrial applications, etc.
- ❖ Clean and Renewable Energy for achieving Sustainable Development Goals
- ❖ Socio-economic benefits for switching to clean and renewable energy
- ❖ National / International Policies in Renewable & Sustainable Energy

IMPORTANT DATES

Workshop Dates	12 th (Tuesday)–14 th (Thursday) January 2021
Registration/Submission of Application (along with Extended Abstract) Starts	2 nd November 2020
Last Date for Submission of Application (along with Extended Abstract)	7 th December 2020
Deadline for Submission of Manuscripts (Full Paper)	21 st December 2020
Deadline for Confirmation of Abstract Acceptance/Selection of Applicants	22 nd December 2020
Issue of Online Conference Link for Participation	5 th January 2021

PROGRAMME OF THE WORKSHOP

A tentative programme of the Workshop is given below:

Date	Programme (Indian Standard Time) [GMT+ 5:30]			
	09.30 – 10:30	10.30-12.30	13.30-15.30	15.30-17.30
12 th January 2021	Inauguration	Plenary Session / Key Note Lecture – I	Technical Sessions – I	Technical Sessions – II
13 th January 2021	Plenary Session / Key Note Lecture - II	Technical Session - III	Plenary Session / Key Note Lecture – III	Technical Session - IV
14 th January 2021	Plenary Session / Key Note Lecture - IV	Technical Session - V	Concluding Session, Discussion & Adoption of Resolution	

A detailed Session-wise Programme will be made available in the First Week of January 2021.

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

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 which was set up in 1989 in New Delhi, India in pursuance of the decisions of various NAM Summits. The Centre undertakes a variety of programmes, including organisation of international 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 and other scientific publications in different subjects of interest to developing countries. The Centre's activities provide opportunity for scientist-to-scientist contact and interactions, familiarising 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 interaction in the developing countries through its NAM S&T-Industry Network.

Amity University, New Delhi NCR, India

Amity University is India's top ranked not-for-profit private University with 40,000 students pursuing 380 degrees in 60 disciplines. Truly multidisciplinary and with a strong focus on research and innovation, Amity is also ranked amongst the top 3% of Universities globally by Times Higher Education and QS Rankings.

With research and academic partnerships with 200 leading Universities around the world, Amity is also Asia's only university to have US Regional Accreditation and QAA, UK accreditation. Amity University faculty and scientists have filed over 1300 patents and the Amity Innovation incubator has produced over 300 companies that have attracted over 50 million US Dollars investments.

Amity University is part of the Amity Education Group founded by Dr Ashok K Chauhan, a leading industrialist and philanthropist. Over the last 30 years Amity has established over 12 universities, 25 schools and numerous institutions with over 175,000 students across India and the world with campuses in London, New York, San Francisco, Amsterdam, Vladivostok, Singapore, Dubai, Abu Dhabi, Sharjah, Tashkent, Mauritius, Nairobi, and Pretoria.

Amity Institute of Advanced Research and Studies [Materials and Devices]

With a goal to make India the global powerhouse in research and innovation, new range of technologies are required to spread from lab-to-land and mind-to-market, for the benefit of society. For that a specialized research center is required, which acts as bridge between Universities and Industries, so that the technologies developed by universities with the help of industries can be directly utilized for the benefits of mankind. The Amity Institute of Advanced Research and Studies (Materials and Devices) [AIARS (M&D)] was established under the kind guidance and broad vision of the Founder President of the Amity Group, Dr. Ashok K. Chauhan and under the leadership of Dr. V. K. Jain.

AIARS (M&D) has been leading the way in various cutting edge areas such as Energy Generation & Storage, Photovoltaics, Solar Instrumentation Fabrication, 3rd Generation Solar Cells based on Nano-materials, Synthesis of Nano-materials, Chemical, Gas and Bio-Sensors, Organic Light Emitting Diodes, Applications of Nanotechnology in Microbiology, Water Purification and Bio-Nano & Bio-medical Technologies. The major aim of the Centre is to promote research in the area of renewable energy, advanced materials and electronic devices. The Centre's focus is on the scientific challenges in the development of energy sector and smart electronics for the next generation of environment friendly energy sources, and sensor technology. Within the short span of 12 years, AIARS (M&D) has published more than 100 research papers in leading journals, filed more than 40 patents (with 10 Granted), transfer three technologies to Industries and many are in the process of commercialization. AIARS (M&D) / AIRAE with its dedicated team has successfully organized several international conferences and workshops such as Indo-Australian and most important 17th International Workshop on the Physics of Semiconductor Devices (IWPSD-2013), International Conference on Recent Trends in Materials and Devices (ICRTMDs – 2015, 2019), Workshop on Advanced Research on Materials and Devices - 2017 and International Conference on Efficient Solar Power Generation and Energy Harvesting (ESPGEH-2019).

A very successful International Conference in collaboration with NAM S&T Centre on *“Trends in Solar Power Generation and Energy Harvesting”* was organized in 2017 at Amity University, Dubai Campus.

PARTICIPANTS

Researchers, scientists, government officials, policy makers, and representatives from industry and non-government organizations, from various countries including the developed nations and NAM and other developing countries – who are engaged in R&D, generation, promotion and policy making on various Renewable Energy sectors are invited to participate in this Virtual Workshop. The combination of participants from various countries will allow exchange of knowledge, ideas and experiences as well as opportunities for global networking and collaboration.

The selection of the participants will be strictly based on merit and relevance of their current responsibilities to the subject of the Workshop as well as the quality of the extended abstract of the paper submitted by them along with the completed nomination form.

RESOURCE PERSONS

The Speakers/Resource Persons for the Workshop will comprise eminent professionals in the relevant fields from India and other countries.

SUBMISSION OF APPLICATION

Scientists, researchers and other professionals desirous of participating in the Workshop (**excepting those from India**) should submit their application **electronically** to the NAM S&T Centre (E-Mail: namstcentre@gmail.com) as early as possible but latest by **Monday, 7th December 2020**.

Applicants from India should, however, submit their requests directly to Dr. V. K. Jain, Distinguished Scientist & Professor, Amity Institute of Advanced Research and Studies (Materials

&Devices), Amity University Noida [Email: vkjain@amity.edu].

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

- i. Filled in Application Form (Blank form **enclosed**)
- ii. A short CV (**maximum two pages; in MS-Word format**) [Format **Enclosed**]
- iii. Opinion (**a short paragraph; in MS-Word format**) how you qualify to participate in the Workshop.
- iv. An Extended Abstract (**in MS Word format**) of the paper that would be presented at the Workshop (**about 1-1 ½ pages**).

PRESENTATION OF PAPERS

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

PUBLICATION OF PROCEEDINGS OF THE 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 **21st December 2020**.

SELECTION OF APPLICANTS

Selection of applicants will be made based on their academic and professional background, and relevance of their current engagements in the relevant field. Successful applicants will be electronically informed about their selection by **22nd December 2020**. The details about the virtual platform that will be used for the Program including the log-in details will also be communicated to the selected applicants by **5th January 2021**. 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

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