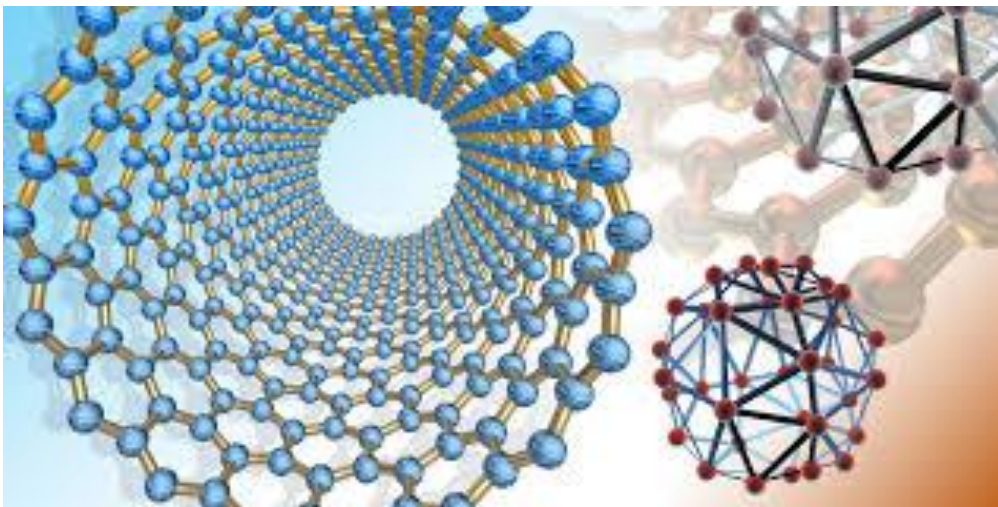




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International Conference:
***"Current Trends and Perspectives on the
Synthesis & Use of Nanomaterials and
Nanotechnologies for Sustainable Energy
Solutions"***



June 28th, 2021

Venue: Constanta, Romania & Online

**Event dedicated to the Celebration of 10th Anniversary of the activity of
the Institute for Nanotechnologies and Alternative Energy Sources**



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Background

The metamaterial paradigm, was articulated in 1959 by R. Feynman, stating “*Up to now, we have been content to dig in the ground to find minerals. What would happen if we could arrange the atoms one by one the way we want them? When we have some control of the arrangement of things on a small scale we will get an enormously greater range of possible properties that substances can have, and of different things that we can do*”. Metamaterials (“*meta*” from the Greek *μετά*, “*beyond*”) are a novel class of “artificial” materials with a complex architecture comprising features spanning over multiple length scales, from “*nano*” and even below up to “*macro*”, and featuring a wide range of “exotic” properties, as e.g. the negative refraction, that cannot be found in other structures and materials platforms. Complex metamaterials and nano-assemblies have already been shown to have the potential to substantially extend the properties of existing materials and advance existing robust engineering materials to respond to the demands of emerging technologies.

At the same time, the utilization of nanomaterials in technologies for renewable energy and sustainability applications is an important area of academic and commercial research.

There are numerous mechanisms by which the integration of nanomaterials can improve device performance. These include, for example, facilitation of increased harvesting and conversion efficiencies, simplified and rapid manufacturing processes for novel device architectures, and improved energy storage properties.

Purpose

The event aims to offer a framework for free debates facilitating the exchange of ideas and knowledge in order to identify new directions to be followed in fundamental and applied scientific research on nanomaterials and nanotechnologies.

Participants

At the event, there will be invited decision makers, government representatives, representatives of local authorities, business community, academics, students, experts in the field, journalists.

Publication

The papers that will be presented in the Conference will be proposed for publication in the **IEEE Transactions on Nanotechnology, Special Section: *Beyond Nano: Smart Nanomaterials, Nanotechnologies and Metamaterials for Plasmonics and Advanced Energy Systems***.

Guest Editors: Prof. Eden Mamut, Ph.D., Michele Giocondo Ph.D., Prof. Guang Tao Fei, Ph.D.

Submission Deadline of Original Papers: September 1st, 2021

Registration

<https://insae.ro/index.php/conference-28-06-2021/>