International Conference on Scientific Research and Revolution

ICSRR 2025

August 17, 2025

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ISBN 978-819871344-5

International Conference
on
Scientific Research and Revolution

ICSRR 2025

August 17, 2025
(Virtual Mode)

Organised By

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SCIENTIFIC RESEARCH REPORTS
(A Book Publisher, approved by Govt. of India)

Chennai - 600 087, Tamil Nadu, India.

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Proceedings of International Conference on Scientific Research and Revolution

ICSRR 2025

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ICSRR 2025, August 2025

ISBN: 978-81-987134-4-5

Published By

SRR
Publicizing Research

SCIENTIFIC RESEARCH REPORTS
(A Book Publisher, approved by Govt. of India)

I Floor, S S Nagar, Chennai - 600 087,
Tamil Nadu, India.

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www.srrbooks.in

ABOUT CONFERENCE

The International Conference on Scientific Research and Revolution (ICSRR 2025), scheduled for August 17, 2025, will be conducted in virtual mode, providing a global platform for researchers, academicians, and industry professionals to share ground-breaking ideas and transformative innovations. This conference will spotlight pioneering research and revolutionary approaches across diverse scientific domains, fostering discussions that challenge conventional thinking and open new frontiers of knowledge.

Through engaging technical sessions and thought-provoking presentations, participants will explore emerging trends, disruptive technologies, and forward-looking solutions that have the potential to shape the future of science and society. Experts from multiple disciplines—including engineering, natural sciences, social sciences, technology, and management—will come together to present cutting-edge work and address pressing global and societal challenges.

With a strong focus on collaboration, innovation, and impactful outcomes, ICSRR 2025 will serve as a unique forum for networking, exchanging ideas, and inspiring research that can lead to meaningful change. Leveraging virtual technologies, the conference aims to ensure inclusivity and reach, enabling participation from across the globe in this pivotal dialogue on the evolution and revolution of scientific research.

ABOUT ORGANIZER

Scientific Research Reports (SRR Books) is an innovative publishing company that publishes digital books in a wide range of arts, social, science, and technology fields and is registered and approved as a digital book publisher with the Government of India. The goal of the Scientific Research Reports is to encourage the dissemination of both fundamental and applied research across the various academic fields and research communities located all over the world. In addition to this, it intends to create research networking among the many different research groups and encourage conversation on emerging research standards

Dr. J. Arunprasad is a faculty member at the School of Mechanical, Industrial, and Aeronautical Engineering, University of the Witwatersrand, Johannesburg, South Africa. He specializes in advanced manufacturing, materials engineering, and mechanical system design. With significant research contributions, he has published in high-impact journals and presented at reputed international conferences. As the corresponding author for several studies, Dr. Arunprasad actively collaborates with global research communities to address industrial and societal challenges through innovative engineering solutions. His dedication to academic excellence, research innovation, and mentoring has established him as a respected professional in the field.

Dr. Sivanraju Rajkumar is a faculty member in the Department of Mechanical Engineering, Faculty of Manufacturing, Institute of Technology, Hawassa University, Hawassa, Ethiopia. He has extensive teaching and research experience in manufacturing engineering, materials science, and mechanical design. His academic contributions include publishing research articles in reputed journals, guiding student projects, and participating in international conferences. Dr. Rajkumar is dedicated to advancing engineering education through innovative teaching methods, industry-oriented research, and skill development initiatives. His commitment to academic excellence and knowledge transfer has made him a valued mentor and contributor to the growth of the mechanical engineering discipline.

Dr. Sharad K. Pasale earned his Ph.D. in Chemistry from the University of Rome Tor Vergata, Italy, in 2014, after completing his M.Sc. in Organic Chemistry from Maulana Azad Research Center, Dr. Babasaheb Ambedkar Marathwada University (2006) and B.Sc. in Chemistry from Dayanand College, Solapur (2004). He worked as a Research Associate at CSIR-National Chemical Laboratory, Pune, and collaborated with Oxford University during his Ph.D., visiting 14 countries for research. He has published over 14 papers, authored five books, and received multiple awards. Currently, as Assistant Professor at Thakur College, Mumbai, he inspires students through his research on heterocycles, polymers, and soft materials.

Dr. M. Chandrasekar is a Professor in the Department of Mechanical Engineering at K. Ramakrishnan College of Technology, Samayapuram, Trichy, India. With extensive academic and research experience, he specializes in areas such as nanomaterials, advanced manufacturing, and mechanical system design. He has guided numerous student projects, published research papers in reputed journals, and actively contributed to conferences and workshops. Dr. Chandrasekar is committed to fostering innovation, skill development, and industry-academia collaboration. His expertise and dedication have significantly advanced the department's academic excellence and research output, making him a respected educator and mentor in the engineering community.

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ICSRR – M044

NANOTECHNOLOGY IN ADVANCED MATERIALS AND BIOFUEL SYSTEMS: A SUSTAINABLE APPROACH

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Abstract:

Nanotechnology has emerged as a transformative tool in the development of advanced materials and biofuel systems, offering innovative solutions to pressing sustainability challenges. This chapter explores the integration of nanostructured materials, nanoparticles, and nano-catalysts in enhancing the efficiency, performance, and environmental compatibility of biofuel production processes. Special emphasis is placed on the role of nanomaterials in improving feedstock conversion, reducing processing costs, and increasing energy yield. The chapter also examines the development of advanced composites, coatings, and functional materials enabled by nanotechnology to improve durability, thermal stability, and biodegradability, thus supporting a circular economy. Furthermore, it highlights case studies demonstrating successful industrial applications, lifecycle assessments, and techno-economic analyses of nanotechnology-enabled biofuel systems. By bridging material science innovations with renewable energy technologies, this sustainable approach aims to advance cleaner energy production and resource efficiency, aligning with global decarbonization and climate change mitigation goals.

Keywords: *Nanotechnology, Advanced materials, Biofuel systems, Nano-catalysts, Sustainable energy, Renewable feedstock, Biomass conversion, Energy efficiency, Circular economy, Green technology*

ISBN 978-819871344-5