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## Editorial

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**Biographical notes:** Ashish Nayyar acquired his PhD in Alternative Fuels and MTech in Energy Engineering from MNIT, Jaipur. He received his BTech in Mechanical Engineering from M.B.M. Engineering College, Jodhpur. He has 18 years of teaching and research experience in the engineering field. Presently, he is working as a Professor in the Department of Mechanical Engineering, Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur. He has published several papers in reputed national and international journals. He is a member of SAEINDIA, Institution of Engineers, India, ISTE and a reviewer of many reputed journals. He has organised various national and international conferences. He also received grants from Ministry of New and Renewable Energy, India and Science and Engineering Research Board, India for conducting these conferences. He received a grant for development of IC engine laboratory under MODROB scheme of AICTE.

Manu Augustine received his BTech in Mechanical Engineering from Mar Athanasius College of Engineering, Kerala, India. Then after a brief stint in the HVAC sector with RINAC India Ltd., he pursued and completed his MTech in Manufacturing Systems Engineering from Malaviya National Institute of Technology (MNIT), Rajasthan, India. He was awarded the gold medal for his research contribution in MTech. He further went on to pursue and complete his PhD in the Mechanical Engineering field from MNIT itself. His doctoral thesis was in the field of design stage interaction failure analysis of physical systems; which forms the core part of his research interests till date. However, he has aided and assisted in research efforts not only from the design field, but also from a variety of other mathematical/engineering fields, which include fuzzy logic, particle swarm optimisation, modelling and simulation.

Manoj Kumar Sain is presently working as an Associate Professor in the Department of Mechanical Engineering at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur, India. He graduated in Mechanical Engineering from University of Rajasthan, Jaipur in 2005. He has obtained his Master's in Manufacturing System Engineering from MNIT Jaipur in 2011, and earned his Doctorate in Industrial Engineering from the same institute in 2019. His research areas include ergonomics, industrial engineering, lean manufacturing, Six Sigma and sustainable development. He has published numerous research papers in various journals and conferences of international

repute. He has 15 years of teaching experience. He has also served as a guest editor and reviewer for various journals. He has also supervised many MTech theses.

Dinesh Kumar Sharma completed his BTech in Mechanical Engineering and MTech in Thermal Engineering from Rajasthan Technical University, Kota, India. He was awarded with gold medal for securing first rank. He is presently pursuing his research towards improvements in the performance of solar-powered vapour absorption cooling system with the help of innovative thermal energy storage technologies. His research interests include solar heating and cooling, alternative fuels, thermal energy storage, phase change materials, energy modelling and simulation. He is acting as a reviewer for many SCI, ESCI, Scopus and reputed refereed journals.

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We are delighted to introduce the special issue on ‘Smart use of resources and strategies for sustainable development’ for the very reputed and refereed journal *Internal Journal of Environmental and Sustainable Development (IJESD)* from Inderscience Publishers. Demand for various forms of energy is rising exponentially throughout the world; and existing means to meet this exorbitant demand are continually falling short of the mark. Moreover, environmental impact of fossil fuels has already become a major global concern. In context to find optimise path towards clean energy and sustainable development, role of smart use of available resources (both conventional and non-conventional) is crucial.

Accelerated research efforts towards this end are already underway at a global level. New technology pertaining to renewable energy sources is being propounded with increasing frequency, and has the potential to positively affect the global energy scenario. However, reliance on fossil fuels, especially in the developing countries does not seem to be diminishing. Emissions from fossil fuels are yet to be reigned in, even in developed nations. Moreover, the impact of technological advancements seems to lack a global reach due to insufficient representation at platforms where ideas can be effectively communicated and shared. In this light, the special issue on ‘Smart use of resources and strategies for sustainable development’ is our sincere effort to bring together relevant ideas of the best minds from around the world to cover literally all aspects of energy technology from a multi-disciplinary perspective.

This first part of this special issue seeks to publish high quality research in the area of solar energy, alternative fuels for IC engine, sustainable development, etc. *Solar energy* is one of the cleanest sources of *energy*, and technologies for solar energy harvesting are very much capable to meet a significant portion of our daily needs. IC engines can be referred as prime movers and emit harmful gaseous pollution in the environment such as CO<sub>2</sub>, HC, NO<sub>x</sub>, PM, etc. Research has been continuing to propose pertinent solution to these issues. Moreover, sustainability is always a lookup for these state-of-the-art technologies.

The idea of this special issue arose from the continuously increasing research to propose sustainable solutions pertaining to the issues associated with the renewable energy. Keeping this in mind, the 2nd International Conference on New and Renewable Energy for Sustainable future was organised by Department of Mechanical Engineering, Swami Keshavanand Institute of Technology, Management and Gramothan, Jaipur (India) in association with Malaviya National Institute of Technology, Jaipur (India) and National Institute of Technology, Uttarakhand (India) from November 7–9, 2019. The

conference was sponsored by Science and Engineering Research Board (SERB, India). ASME Student Section, SAEINDIA Collegiate Club, Institution of Engineers (India), ISTE, ASHRAE India Chapter, Indian Concrete Institute and EasyChair were the technical collaborators for this multidisciplinary conference. A total of 25 articles were accepted for this special issue call. This is the first volume for this special issue contains 12 papers covering state of the art research on solar energy, alternative fuels for IC engines, sustainable development, etc.

We are very thankful to Dr. M.A. Dorgham (Editor-in-Chief), Alexandra Starkie (Journal Manager), and all the associated team members from the *IJESD* journal for providing us with this opportunity for this conference series. We are also thankful to all the authors and co-authors for contributing their original cutting-edge research for this special issue.