



Shri Pandurang Pratishthan's
Karmayogi Engineering College
Shelve-Pandharpur Dist. Solapur



Proceedings of National Conference on Relevance of Engineering and Science for Environment and Society



Editors

Abhay A. Utpat

Jagdish L. Mudegaonkar

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Abhay A. Utpat
Jagdish L. Mudegaonkar
(Editors)

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Relevance of Engineering and Science
for Environment and Society*

R{ES}² 2021 (25th July, 2021)

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R{ES}² 2021 (25th July, 2021)

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- Prof. J. L. Mudegaonkar, Department of Electronics & Telecommunication, KECSP, Maharashtra, India

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About the Conference

SPP's Karmayogi Engineering College, Shelve Pandharpur has successfully organized National Conference on "Relevance of Engineering and Science for Environment and Society" R{ES}², 2021 on Sunday, 25th, July 2021 through virtual mode Zoom meeting and Google meeting. In the short notification, there was overwhelming response and maximum of selected papers were presented during the conference.

The main objective of conference is to provide an opportunity for leading academicians, engineers, scientists, researchers, industrial professionals and students from around the world to network and have scientific discussions on the latest developments in the field of Computer science, Civil, Mechanical and Electronics and Telecommunications Engineering.

The conference is also a space for creating collaborative links between academics and professional practitioners and their workplaces, aiming at long-term sharing of knowledge and discussions of highly current issues.

The conference aims at creating interest in the minds of young graduates to pursue research as their career. We sincerely hope that R{ES}², 2021 will facilitate as a platform to increase the scope and promote interdisciplinary research among researchers and helps in presenting technological advancements in the emerging areas of science and engineering.

Message from Organizers



Hon. Rohan Paricharak
Trustee, SPP

It is my great pleasure to congratulate you for participating in the national Conference on Relevance of Engineering and Science for Environment and Society – R {ES}², on July 25th 2021. Over the past Thirteen years, Shri Pandurang Prathisthan's KECSP has provided a cross-disciplinary venue for researchers and practitioners to address the rich space of communications and networking research and technology. There was a plan to arrange conference in the Institute Premises physically, but due to current pandemic situation, it was organized through virtual mode. Two Keynote speakers' presentations, four session chairmen have provided ample opportunities for discussions, debate, and exchange of ideas and information among conference participants. The conference would not have been possible without the enthusiastic and hard work of all staff members and non teaching staff.

We are also grateful to all the authors who trusted the conference with their work. Special thanks to the Keynote Speakers, Prof. Dr. S. N. Joshi, IIT, Guwahati and Dr. S. B. Deosarkar DBATU, Lonere and all the panelists for sharing their views on current research topics. We look forward to an exciting day of insightful presentations, discussions, and sharing of technical ideas with colleagues from around the India. We thank you for attending the conference and we hope that you have enjoyed the conference.



Prof. Dr. S. P. Patil
Principal, KEC

On behalf of Karmayogi Engineering College, I extend a very warm welcome to all the delegates and participants of the national Conference -Relevance of Engineering and Science for Environment and Society – R{ES}². KECSP has borne the mantle of excellence, committed to ensure the students their own space to learn, grow and broaden their horizon of knowledge by taking deep dive into diverse spheres of learning. In our endeavor to raise the standards of discourse, we continue to remain aware in order to meet with the changing needs of our stakeholders. The Conference aims to bring different ideologies under one roof and provide opportunities to exchange ideas face to face through virtual mode, to establish research relations.

The theme of this conference is indicative of relevant research areas in Environment and Society to give the prospective authors innovative prepositions about the ambit of discussion. There are various pillars of the Education System in a nation. We have invited eminent dignitaries from different sectors to get a better understanding of these pillars of the Education System and the several strategies involved. I wish to thank our eminent keynote speakers: Prof. Dr. S. N. Joshi IIT, Guwahati and Dr. S. B. Deosarkar DBATU, Lonere .We would like to thank AIJR Publisher, Dhaurahra, Balrampur, India for providing us with the platform for online publication. Last but not the least; we would also like to thank the Management, Faculty members, the organizers for their contribution in successfully organizing and managing this event. This event wouldn't have been possible without their involvement and efforts.

Thank you!



Prof. Dr. Abhay. A. Utpat
Convener & Editor

It is an honor to be a Editor of National Conference R {ES}². It has been my pleasure to contribute conference summaries to R {ES}². Welcome to the Proceedings of the national Conference on Relevance of Engineering and Science for Environment and Society – R{ES}² on July 25th 2021, with its special theme on Environment and society. Ensuring a high quality conference requires accepting papers that pass a rigorous review process. In this conference, a large number of papers were submitted. Each paper was subject to review by reviewers of the program committee members. The papers came from across India. We have 4 technical tracks, 2 keynotes, a smartness innovation adoption session and forum. We would like to express our deepest appreciation to the authors whose technical contributions are presented in these proceedings.

It is because of their excellent contributions and hard work that we have been able to prepare these proceedings. The significance of the research presented in this conference represents a step further towards maturity in Environment and Society.

I would like to thank all our keynote speakers who made all the efforts to synthesize the materials and their wide and rich experiences to deliver distinguished talks. I would also like to thank all our session chairmen for their great efforts in assessing the presentations and guiding to authors. We are very grateful to our reviewers for their great efforts in reviewing the papers in their tracks. Finally, we hope that the participants have enjoyed the conference program of the 2021, national Conference on Relevance of Engineering and Science for Environment and Society. Thank You!



**Prof. Jagdish L.
Mudegaonkar**
Co-Editor

Dear R{ES}² 2021 participants!

After the 1990's, the World has started to change fast because of technological improvements especially internet based. These improvements have changed not only most socially systems including educational institutions but also social development and educational perspectives. One of the most striking perspectives related to education: Lifelong Learning. We organized national Conference on Relevance of Engineering and Science for Environment and Society – R{ES}² on July 25th 2021, conference had taken much interest from academicians and researchers.

We would like to Thanks all the participants and all the supporter universities from India. I would like to thanks all the Keynote Speakers and the organization team as well. R{ES}² Conferences is not only academic but also Environment and social. R{ES}² Conference Proceeding Book provides a critical summary of current developments in understanding both lifelong learning and new leadership perspectives in education and in the environmental and societal context and leadership in education for all. Across the different contributions and sections of the Conference Proceeding Book covers a wide range of topics. We would like to thank everyone who contributed to the various processes involved in the making of this book.

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Peer Review Policy

Authors were invited to submit full-length papers for peer-review. Each manuscript was peer-reviewed by two (2) or more technical specialists. The review process is conducted anonymously. To be published both reviewers were to agree separately that the manuscript met the standard required for publication in these proceedings. Ignoring withdrawn papers, there were 95 papers submitted and 66 accepted for oral presentations. The committee and technical chairs would like to thank all the reviewers for their diligence and for contributing their time, effort, and technical expertise to the review process.

List of Reviewers

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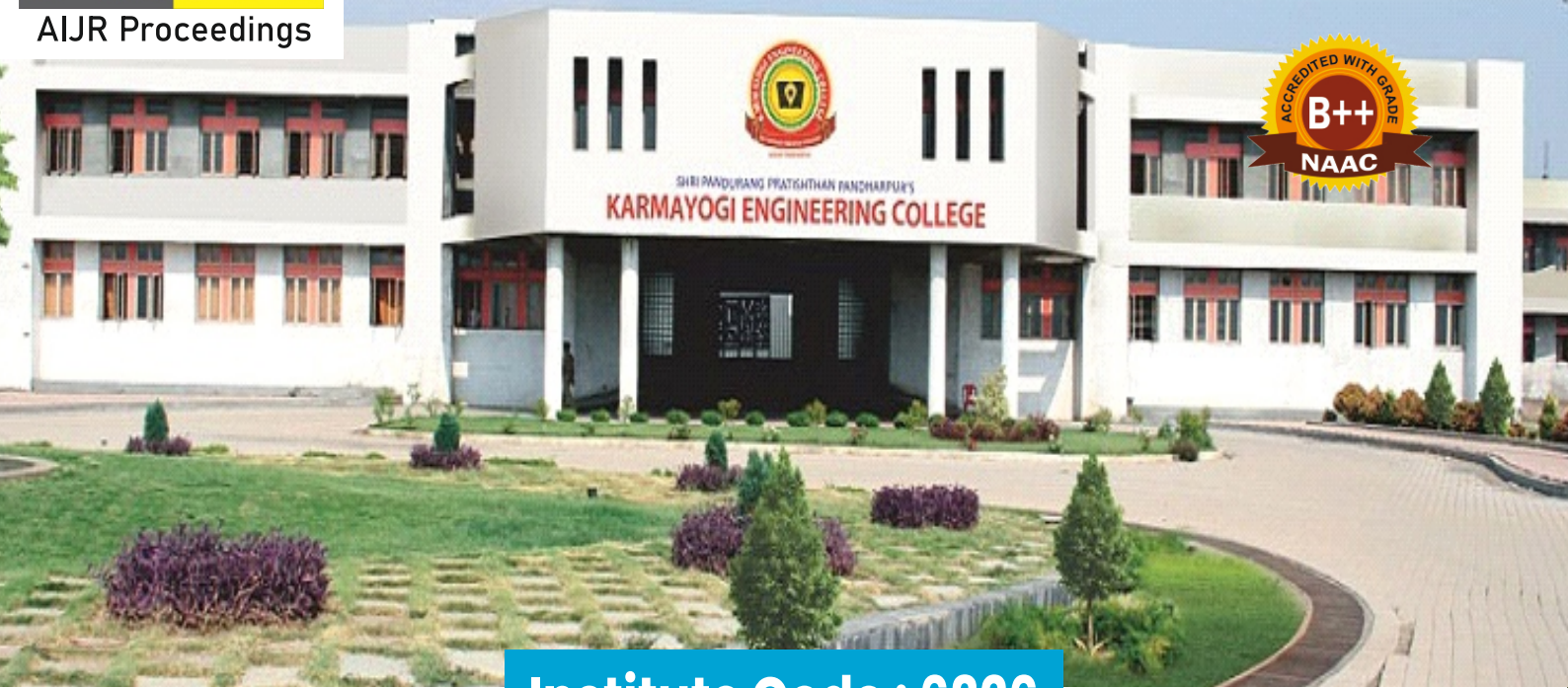
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Karmayogi Engineering College**

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