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RESILIENCE 360
INTERNATIONAL CONFERENCE ON SUSTAINBILITY

RESILIENCE 360

INTERNATIONAL CONFERENCE ON SUSTAINABILITY

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Resilience 360

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International Conference
on
Sustainability, RESILIENCE 360

First Volume

Editor
Dr. Sainu Franco

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Foreword

International Conference on Sustainability

Title: RESILIENCE 360

Sustainability has become quite a buzzword. Even though it is currently being used in business slogans, political platforms, product commercials, etc., when it comes to the environment, the focus is on sustainably utilizing our available resources in a way that avoids depleting them for future generations. Yet, it's important not to lose sight of alternate conservation efforts and concepts that can help protect the environment. Resilience is not akin to sustainability, nor is it a substitute. The two concepts complement each other well, and the implementation of resilience will only continue to aid the environment. When bouncing back from failure has become our state of actuality, resilience is indeed the future. This conference intended to bring together the various facets of Science, and approach the issues of sustainability in a holistic manner. Our endeavour was to convene a diverse set of stakeholders to understand and deliberate on the opportunities and challenges of integrating sustainability in industrial and business practices and also making suitable life-style changes.

The primary objectives of Resilience-360 included:

- Reiterating the need to conserve resources
- Exploring and identifying, ideas and methods to preserve nature and life
- Forging a collaboration of researchers from various fields, with an aim to ensure sustainable growth and development
- Assisting the new researchers to identify their area of research
- Enabling faculty participants to identify the plethora of fields where sustainability can be gainfully applied
- Encouraging young researchers to present their findings before the experts in the field.

Sustainable development proposed and promoted by the United Nations calls for a concerted effort towards building a resilient future for the planet and it's people, which is both inclusive and sustainable. This conference is the first in a series to approach the issue of Sustainability from a 360 degree perspective. It is a multi- pronged approach to resolve this very important issue that mankind is facing. Keeping in mind the very sustenance of human race, the basic needs of mankind, such as food, water, climate, materials, fuel etc are to be ensured for the future generations. Experts from multiple fields were invited to share their expertise. Diverse fields such as Ground water, Food Technology, Geology, Anthropology, Chemistry, Alternate Fuels, Artificial Intelligence, GIS, Remediation etc have all been included. The Keynote address as well as invited talks were all tailored to address the issue of sustainability.

Dr. Sainu Franco
Convenor

Proceedings of DST- SERB and IEI (Pvt Ltd) sponsored International Conference on Sustainability, RESILIENCE 360
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Preface

RESILIENCE 360 is an interdisciplinary journal on Sustainability, exploring and bringing together the various facets of Science and Engineering in order to approach the issues of sustainability in a holistic manner.

As human population grows, resources become finite, and our ecological footprint deepens, making it imperative to develop sustainable solutions. The journal aims to unearth innovative approaches, pioneering research, and transformative ideas unified by the goal of promoting sustainability. The symbiotic relationship between the main themes of the international conference on sustainability, exemplifies the delicate balance between human prosperity and ecological well-being. By engaging with diverse disciplines, RESILIENCE 360 aims to empower readers to be change agents in their respective domains. Each article has been carefully curated and reviewed, presenting a unique piece of the puzzle, enriching our understanding of how to preserve and nourish our planet for generations to come.

Acknowledgement

The realization of RESILIENCE 360, journal on sustainability has been a collaborative endeavour, and we are deeply grateful to the Principal and Management of Providence College of Engineering, whose contributions and support have made this publication possible.

The financial assistance provided by Science and Engineering Research Board (Department of Science and Technology, Government of India) played a crucial role in organizing the International Conference on Sustainability and also the publication of the conference proceedings as a journal. Their commitment to promoting scientific research and fostering innovation in diverse fields of sustainability has been instrumental in the realization of this publication.

We also express our sincere appreciation to the Institution of Engineers, India (IEI) for their collaboration and endorsement of RESILIENCE 360. The support from IEI has not only lent credibility to this endeavour but also reinforced the importance of disseminating knowledge and advancements in engineering and related domains.

We extend our heartfelt gratitude to the authors and researchers who have dedicated their time, knowledge, and expertise to produce insightful and innovative contributions for this journal. Your commitment to advancing the understanding and practice of sustainability in the various realms of sustainability is truly commendable.

We would like to express our sincere gratitude to the reviewers who diligently evaluated the submitted manuscripts, providing valuable feedback and ensuring the quality of the published works. Your critical assessments have been instrumental in maintaining the scholarly integrity of this journal.

We are thankful for the support and guidance from the editorial board members, whose vast experience and expertise have steered the direction of RESILIENCE 360.

Furthermore, we acknowledge the efforts of the journal's editorial and organizing team. Your meticulous work behind the scenes, from managing submissions to formatting and publishing, has been essential to bringing this journal to fruition.

Finally, the success of RESILIENCE 360 would not have been possible without the unwavering support of our readers. Your curiosity and enthusiasm for sustainable practices and innovations inspire us to continually strive for excellence.

Dr. Sainu Franco
Editor-in-Chief

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ABOUT THE CONVENOR

Dr. Sainu Franco, FIE, obtained her Ph.D in Environmental Engineering from VIT University in 2016. At present she heads the Department of Civil Engineering at Providence College of Engineering, Chengannur. She has also served at the Department of Water Supply and Environmental Engineering, Arba Minch University, Ethiopia. Her research has been on the topic "Urbanization and its implications on an emerging Mega-city". She has published several research papers in reputed journals. She has been part of the "Pollution abatement of stretches/rivers of the state of Kerala", a project of the Kerala State Irrigation Department. Dr. Sainu led a team from Providence College of Engineering and conducted the Reconnaissance Survey of the polluted stretch of the Pamba River. She was also involved in the Traffic Volume Survey conducted by NATPAC for the project "Feasibility of Providing Access to Skywalk at Kottayam". She has received awards for Teaching Excellence and for contributions in the field of Research and Development, both from Providence College of Engineering and VIT University, Vellore. She has organized several programmes including a Faculty Development Programme on Professional Ethics which had a tremendous response from faculty members across the country. Seminars involving Indian and International Experts on various topics were also organized by her.

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