

ARAI Journal of Mobility Technology

A Quarterly Peer-Reviewed Journal

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Foreword

At the outset I would like to congratulate ARAI for starting a "Journal of Mobility Technology", so crucial and important for our Automotive & Allied industry, in line with national perspective. I am pleased to be on the Board of ARAI journal of Mobility Technology.

Honorable Prime Minister Shri Narendra Modi has been launching a series of initiatives right from 2014, since he assumed office as the Prime Minister of India. Swachha Bharat Abhiyan, Digital India, Skill India, Smart Cities, Make in India, Startup India and Atma Nirbhar Bharat. All these initiatives are linked with each other to create a New India, an aspirational India with inspiration for the youth to be not just innovative but employable and entrepreneurial.

Amongst all the industries, two domains stand out: The IT and Automotive industry with huge potential for the growth of Indian Economy and create large scale employment opportunities through Startups, MSMEs hand in hand with large auto industries. It is in this context that a lot of Innovation and Research & Development taking shape in India.

There was an urgent need felt for providing a grand platform where all developments needed can be showcased. This vacuum has been filled by the Journal of Mobility Technology. The research in EVs, batteries charging infrastructure, the modifications in engines for multi fuel injection including green chemistry and green fuels has huge potential in reducing pollution and increasing efficiency.

This journal shall provide opportunity for the young researchers to present their findings and prepare for collaborative development and make a mark in global industry. The journal should also provide job openings and internship opportunities for engineering graduates and students. My best wishes for the editorial team of the Journal.

Yours Sincerely,

Prof. Anil D. Sahasrabudhe
Chairman AICTE
New Delhi



Message

It gives me immense pleasure to introduce the first issue of "ARAI Journal of Mobility Technology (AJMT)" published through BSP Books Pvt. Ltd. AJMT is the first technical journal of its kind to serve as a platform for the dissemination of high-quality research in the field of mobility technology. Since establishment in 1996, ARAI has been serving the automotive and allied industry for over five & half decades to produce environment-friendly and safer mobility. ARAI's transformation from a test agency to renowned global Automotive R&D Institute is appreciable. In the spectrum of ARAI's activities, research has always occupied a crucial place, with an institutional emphasis on strong and pervasive interface between research, testing and training. Some of the measures of research are paper publications and patents.

We are delighted to launch this journal. Our goal in launching this new journal is to provide a top tier publication outlet for the latest research in the rapidly growing field of automotive technologies. We would like to publish articles that use real world data to solve real world problems in a creative and innovative manner. We solicit articles that specifically address an interesting research problem, collect and/or repurpose multiple types of data sets, develop and evaluate methodologies to solve the problem in a new and novel way.

Our first issue features ten invited papers on a variety of topics including Safe, Smart and Sustainable Mobility. I am confident that this inaugural issue, which includes all of the published technical papers, will be a valuable resource for researchers, students and concerned stakeholders. All of these articles will be published online in our journal website (<https://araijournal.com/>) in order to effectively disseminate information around the world. We hope you enjoy reading this first issue and we invite you and your colleagues to contribute to future issues of AJMT.

I would like to thank everyone on the Editorial team and the Advisory Board for their efforts in putting this issue together.

Sincerely,

Dr. Reji Mathai

Director - ARAI

Chairman - Advisory Board

(ARAI Journal of Mobility Technology)

Message

With this inaugural issue, we celebrate the launch of the ARAI Journal of Mobility Technology (AJMT) with immense pleasure, humility and anticipation. We would like to extend a warm welcome to the AJMT readership on behalf of the Editorial Team. We like to take this opportunity to thank our readers, authors, editors & advisory board members, who all have volunteered to help the journal succeed.

The purpose of this journal is to meet the needs of professionals, academia and industry, as well as to disseminate original research in all fields of automotive technology and its related subjects. One of the objectives of this journal is to encourage publication from different streams of research, which will help to enrich the discourse on various topics.

AJMT covers a wide range of topics in the automotive and related areas: Advance Driver Assistance Systems (ADAS); After Treatment System; All-terrain Vehicle Technology; Alternate Fuels; Artificial Intelligence; Automotive Electronics; Automotive Lightweight Technology; Automotive Safety; Functional Safety; Autonomous / Connected Mobility; Shared Mobility; Computational Fluid Dynamics; Computer Aided Engineering; Computer Aided Design; Control Systems; Electric & Hybrid Vehicles; Emission; Energy; Environment Research; Heat & Mass Transfer; HVAC; Impact Biomechanics; Industrial Management; Innovation and Collaboration; Materials & Manufacturing; Mechanics of Discrete Systems; Noise, Vibration and Harshness; Off Highway Vehicle; Powertrain Technologies; Automotive Components; Prototyping; Recycling; Simulation; Suspension, Steering & Brakes; Testing & Validation, Certification & Homologation; Tyres; Vehicle Design; Vehicle Dynamics; Structural Dynamics. We would also like to include topics from Smart, Safe, and Sustainable mobility, with an aim to develop an understanding of the current scenario of ACES (Autonomous, Connected, Electric Shared vehicles).

The AJMT will provide an excellent forum for the exchange of information on all of the above topics, in two formats: full-length research papers and review papers written by industry experts. The editorial board of the journal is confident that this initiative will produce technical-driven, peer-reviewed papers that adhere to the rigorous processes and editorial standards expected by the automotive community. This journal will be published four times a year (Quarterly). To ensure timely dissemination of information, we aim to complete each paper's review process within two months of initial submission.

The AJMT is committed to publishing original work. Each paper should present some novelty and new results in the form of a uniquely written paper entirely in the author's own words. Furthermore, we will issue special calls for papers on a regular basis to modernize and strengthen areas of research and development highlighted in automotive and related subjects, which will be published as special issues.

We conclude by inviting everyone to submit their exciting research to AJMT. All papers that receive a high level of enthusiasm during the peer-review process will be published in AJMT. As a result, we are dedicated to publishing any and all discoveries, methods, resources and reviews that significantly advance the field of automotive technology and its applications.

We would like to welcome you once again to the ARAI Journal of Mobility Technology. We believe that with your help as authors, reviewers and editors, AJMT will be able to serve the mobility community even better in the future. We hope to hear from you soon and we appreciate any feedback you may have!

If you have any queries, suggestions or concerns, please use the website feedback form to express them. Thank you very much. We hope you will find AJMT useful.

Sincerely,

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Dr. K.C. Vora



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About the Journal

ARAI Journal of Mobility Technology is a print and online technical journal in automotive and its related fields. To cater to the needs of Professionals, Academia & Industry and to further the dissemination of original research in all fields of automotive technology, ARAI is publishing a Technical Journal. This Journal is published under the editorial supervision of Chief Editor and the editorial team. In addition, journal is published under the directions of eminent and expert editorial board from India, USA and other countries. It is published by ARAI in collaboration with BSP Books Pvt. Ltd.

One of the objective of this Journal is to provide a platform for the publication of articles covering a wide range of automotive and its allied subjects. Manuscript published in this journal will receive very high publicity and acquire a very high reputation in the automotive and research communities.

This journal is open to all researchers worldwide for contribution and publication and it is targeted at scholars, academicians and professionals involved in the Automotive Industry.

Journal Profile

- Free publication: No article processing charges for first two years (Till 31st March 2023).
- Fair evaluation: Rapid and prompt processing of manuscripts, fair peer and editorial evaluation process.
- Wide benefits: Publishing in this journal provides authors with a wide range of benefits.
- Top editorial team: Excellent editorial oversight with rapid review.
- Broad distribution: The broadest readership via global distribution, email alerts, and cross-referencing.
- Archival system: A sophisticated online platform through standard Manuscript submission and archival (coming soon)
- Online access: All published articles are available online at the journal website up to abstract level
- DOI Listed: All articles made available online via DOI listing.
- High potential citation: Increased readership and citations via quality articles (TBA).
- Editorial corrections: Text, References and English corrections of articles are made by the Editors during production process.

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