

PREFACE

I am extremely delighted to write the preface of the **Indian Journal of Engineering and Materials Sciences (IJEMS)** August 2020, devoted to the ICAPIE'19 conference. This special issue consists of selected peer reviewed papers presented during the **4th International Conference on Advanced Production and Industrial Engineering (ICAPIE' 19)** held from **20-21st December 2019** jointly organized by **Centre for Advanced Production and Industrial Engineering Research (CAPIER) - Delhi Technological University (DTU)** and **Department of Design, DTU** in collaboration with **Delhi Institute of Tool Engineering (DITE), Delhi**.

The prime motive of ICAPIE' 19 was to seek new windows for discoveries and exploration in Design, Materials, and Manufacturing which plays a major role in almost all fields of scientific growth and to provide an arena for showcasing these advancements and research endeavors being undertaken in all parts of the world. We have a privilege to host a congregation of world-renowned scholars and experts as keynote speakers, who gathered for the conference and grace us with their words of wisdom in their fields of expertise. We feel proud in saying that in comparison to the last three years, we have received a larger number of technical papers with richer contents, comprising path-breaking research from participants from various institutes.

We express our deep sense of gratitude to our **Vice-Chancellor Prof Yogesh Singh, Chief patron** for his keen interest in promoting research in the **Delhi Technological University, Delhi** and always been an inspiration for achieving greater heights.

The organizers are grateful to all authors and participants who have made significant contributions in the form of their papers.

We also thank **Dr. Harish Kumar, HoD (Mechanical Engineering), National Institute of Technology Delhi** and the reviewers for their constructive suggestions to improve the manuscripts. We also thank **Ms. Meetali Bharti, Editor, IJEMS** and **Dr. Meher Wan**, for their constructive comments and suggestions which helped in bringing the best quality work in the form of this publication, without which it would not have been possible to come up with this issue.

Prof. Yogesh Singh
Vice-Chancellor,
Delhi Technological University, Delhi
Chief Patron, ICAPIE'19

Prof. Ranganath M. Singari
HoD (Design) & Professor
Mechanical, Production & Industrial
and Automobile Engineering
Delhi Technological University, Delhi
Conference Chair, ICAPIE'19