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**Gulzar Group of Institutes**

# SOUVENIR



## ICTSEM'21

**INTERNATIONAL CONFERENCE  
ON TRENDS IN SCIENCE, ENGINEERING & MANAGEMENT**

**17<sup>TH</sup> - 18<sup>TH</sup> SEPTEMBER, 2021**



# GULZAR GROUP OF INSTITUTES

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*Proceedings of*  
**International Conference on Trends in Science, Engineering  
and Management (ICTSEM'21)**

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ISBN No.: 978-93-5258-841-1

Published by:

**GULZAR GROUP OF INSTITUTIONS**

Campus Address: G.T. Road, Khanna, Ludhiana (Pb.)

## **PREFACE**

The International conference on Trends in Science, Engineering and Management (ICTSEM'21) is being organized at Gulzar Group of Institutions, Ludhiana, India on the auspicious occasion of successful completion of one decade.

The purpose of this conference is to provide a forum for scientists, engineers and academicians from the institutions, universities and industry around the world to share their research activities and their achievements in addressing the challenges being faced. We would like to thank all participants for their contributions to the conference.

This conference proceeding contains papers presented during ICTSEM'21. This conference aims to disseminate the latest research in Science, Engineering & Management.

It is hoped that the friendliness and candidness of ICTSEM'21 shall enhance the ability of the delegates to grow by interacting with the experienced resource persons and young researchers.

My gratitude is due to S. Gurcharan Singh, Chairman, Gulzar Group of Institutes, Khanna, who has been very encouraging and supportive. Holding of this conference and the publication of the proceedings have been possible due to whole hearted support of the Management of GGI. A fundamental role in the conference preparation has been played by the local organizing committee and the members of the staff, each of which gave an outstanding contribution. Last but not the least I thank one and all for their support to make this conference a milestone in all aspects.

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