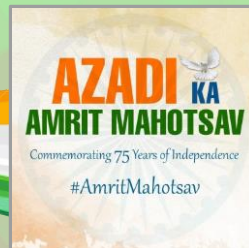# Online Workshop on
ICME READINESS OF DIGITAL PLATFORMS

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An Invited Technical Presentation Series: July-August, 2021

Organized by
ICME National Hub
in association with
Indian National Academy of Engineering

AZADI KA AMRIT MAHOTSAV
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ENGINEER & MANUFACTURE MULTI-MATERIAL BODY AND CHASSIS ASSEMBLIES WITH CONFIDENCE USING ESI'S NUMERICAL SOLUTION

By

Mr. Sridhar Rajagopalan
Technical Director, Smart Manufacturing and Human Centric, ESI Software India Pvt. Ltd.

Date and Time
August 13, 2021 (Friday), 06:00 PM IST

Zoom link for the event
https://iitk-ac-in.zoom.us/j/99274377711?pwd=ZStBVllNZ053WkVTeFR6a2pCOFdoZz09
Meeting ID: 992 7437 7711
Passcode: 524637

◆◆ **About the Workshop** ◆◆

Integrated Computational Materials Engineering (ICME) is an emerging and transformative discipline with a huge potential to accelerate materials discovery, product design and process optimization. The Indian National Academy of Engineering (INAE) is engaged in developing a technology roadmap for "Accelerated Materials Discovery, Scale-up and Exploitation Strategy for Strategic Materials Needs of India". The compilation and integration capabilities of various digital platforms that can assist the ICME community is one of the essential parts of this effort. Therefore, the ICME National Hub at IIT Kanpur, in association with INAE, is organizing a "Workshop on ICME Readiness of Digital Platforms" – a technical presentation series about the capabilities of important digital platforms vis-à-vis accelerated development, production and exploitation of materials and products.
For more details please visit: https://www.iitk.ac.in/ICME/INAE-Workshop/

ICME National Hub Website: https://www.iitk.ac.in/ICME/
INAE Website: https://www.inae.in/

Abstract

"Lightweight" has become the new must-have in body and chassis design. Multi-material assemblies are key to producing vehicle bodies with the best cost to weight ratio. However, it is a complex task to find the right combination of materials; apply the right material at the right place; optimize geometries and thicknesses; define the various manufacturing processes and select the optimal joining technologies especially in a shop floor trial, and error methodology.

The most effective and efficient way to address this is by using numerical methods. However, achieving best cost to weight ratio may not be efficiently achievable with single-point numerical simulations, especially when the manufacturing history is unknown or ignored. With ESI's Multi Material Joining and Assembly (MMJA) solution, from frontloaded manufacturing feasibility assessment for design, over predictive performance analysis considering the manufacturing impact, through to the complete simulation and validation of the manufacturing processes early in the development, it is now very much possible to consider the end-to-end vision with the target to get the assembly right at the first time. ESI's solutions also ensure improved dimensional accuracy of body and chassis assemblies, optimized manufacturing processes and can make quality compliance efficient.

About the Speaker

Mr. Sridhar Rajagopalan has been working in the area of Manufacturing for the last twenty years specializing in the field of numerical simulation. Currently, in the capacity of **Technical Director – Smart Manufacturing and Human Centric, ESI Software India Pvt Ltd,** Mr. Rajagopalan's focus is to work with the various auto majors to establish a close relation in the field of numerical approach by combining various manufacturing processes such as Metal forming, Joining Welding and Assembly, Composite Manufacturing, using numerical methods and validating the same with shop floor trials.

Mr. Rajagopalan has a Master's degree from University of Dortmund in Industrial Design and Manufacturing. In the past years he has been an active participant in various industrial and technical forum like IDDRG, IMTMA, SMFRA, LWT, Automotive Crash Testing, etc., and has presented various papers in the domains of Virtual Manufacturing, Crash Impact and Safety, Metal Forming etc.

◆◆ **Conveners** ◆◆

Dr. S. Bhattacharya
MSME, IIT Hyderabad
saswata[AT]msme.iith.ac.in

Dr. G. Phanikumar
MME, IIT Madras
gphani[AT]iitm.ac.in

Dr. P. Chakraborty
AE, IIT Kanpur
cpritam[AT]iitk.ac.in

Dr. R. Sankarasubramanian
DMRL, DRDO, Hyderabad
sankara[AT]dmrl.drdo.in