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**NMAM INSTITUTE
OF TECHNOLOGY**

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**NMAM INSTITUTE
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**Two Days
National Symposium
on**

Recent Advances in Processing Techniques for Improving the Surface Integrity of Aerospace – Defence Materials (RPISD 2023)

6 - 7 October 2023



(DRDO, New Delhi, Funded)

Organized by

**Department of Mechanical Engineering
NMAM Institute of Technology
Off- Campus Center, Nitte (DU)**



About Nitte (Deemed to be University)

Nitte (Deemed-to-be University) has its roots in a group of Institutions established by the Nitte Education Trust. The Trust was established in 1979 by one of India's respected Statesman, Late Justice KS Hegde, Supreme Court Judge and Speaker of Lok Sabha, with the mission of empowering rural youth through quality education and healthcare. The Trust has established 36 institutions spread over three campuses at Nitte, Mangalore and Bangalore. It offers education in diverse areas of learning including health professions education, engineering, management, humanities, general education, vocational training, and school/pre-university education. The University received A+ Grading in NAAC accreditation in 2021. It has been consistently placed in the Top 60-80 rank band in NIRF. The University is placed in the 401 to 450 Rank Band in the QS Rankings for Asia Region. It has received Diamond rating in the QS I-Gauge India Ratings. Nitte (Deemed to be University) is one among eight Indian Universities in the Top 300 of the world's Universities in the 2022 edition of Times Higher Education Impact Rankings.

About NMAMIT

Situated in the Sylvan surroundings at the foot of the western ghats, the Nitte village is 53 kms from Mangalore city. Nitte Mahalinga Adyanthaya Memorial Institute of Technology (NMAMIT), an Off-Campus center of Nitte (Deemed to be University), Mangalore, is a premier Engineering Institution that was established in 1986. The institute is recognized by the All-India Council for Technical Education [AICTE], New Delhi, and accredited by National Assessment & Accreditation Council [NAAC] with an 'A' grade with a CGPA of 3.11. The institution offers 11 UG programs and the following UG Programs i.e., BE in Biotechnology, Civil Engineering, Computer Science & Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Information Science & Engineering, and Mechanical Engineering are accredited by NBA, New Delhi under Tier - I category till 30th June 2025. UG programs on Artificial Intelligence & Machine Learning and Computer & Communication Engineering have been started in the year 2020-21 and Artificial Intelligence and Data Science is started in the academic year 2022-23. The institution offers 8 MTech programs, MCA, MBA and Doctoral programs. The Institution has secured 100 – 150 rank band in NIRF-2023 in the engineering category.

About RPISD

Selection of suitable materials have significant impact on different applications in aerospace and defence sectors. But the selection is not an easy decision, due to the high standard requirements of these industries. The focus should be on developing materials that are able to meet these high standards as well they need to be cost effective. Surface integrity is an important requirement while selecting materials for these sectors, as they provide improved functional performance. Different materials like Aluminium, Magnesium, Lithium, Titanium and Nickel based alloys, Composites etc. have been investigated and being used in different components used in aircrafts and other machines used in defence applications. Surface integrity has not been provided the required importance by industries, inspite of research being carried out, particularly regarding its influence on different properties and its performance in many critical components. There has been limited research regarding the influence of processing methods on the surface integrity of these materials. Many of these materials are very expensive, but are widely used in defence and related applications due to their exceptional properties. Theories suggest that improving surface integrity would increase the functional performance of these materials. So, a deep understanding of the importance of effective processing methods on surface integrity of these materials is required in order to completely justify their high cost. Selection of the appropriate processing technique, optimal process parameters, precise data

measurement, simulation and optimization techniques are a few areas which needs more focus in order to study the surface integrity. In this context, there is a need to understand the most recent developments with these kinds of materials and find meaningful solutions to the problems of the aerospace and defence industries. This symposium will be a forum for sharing knowledge between researchers, academicians and industry professionals in the field of surface integrity.

Symposium Mode: Symposium is planned to be in face-to-face mode, at NMAMIT, Nitte campus.

A list of areas under which abstracts are invited includes:

- Selection of material for aerospace & defence applications
- Effective processing methods of aerospace based materials
- Effect of manufacturing processes and surface treatments on surface integrity
- Properties related to surface integrity such as corrosion, fatigue, wear resistance etc.
- Surface and substrate properties
- Simulation and modelling of SI
- Effective optimization techniques
- Metrology aspects of SI
- Industrial case studies

Resource Persons: Experts from R & D Organizations, NIT & Defence Institutions.

Important dates

Last date for submission of Poster/Abstract : Sep 20, 2023
Notification of acceptance : Sep 25, 2023
Last date for registration : Oct 1, 2023

Poster/Abstract Submission: Abstracts not exceeding 300 words should be prepared in single page. Figures/Tables can be included, should fit in the same page. The abstracts should be submitted in this link: <https://forms.gle/4PaBzEvapD83HNMZA>

Awards

Best posters will be rewarded a prize of **Rs. 5000/-** (1st) & **Rs. 3000/-** (2nd). Presentation certificate will be awarded to the Presenter and the Participation certificate will be awarded to the Attendee.

Registration

1. Presenter should pay a Registration fee of **Rs. 500/-** after the acceptance of abstract.
 2. Attendee should pay a Registration fee of **Rs. 300/-**
- Registration link: <https://forms.gle/Sel2AiWjvRtq7f5d9>

Details of NEFT payment are as follows:

Account Name: Nitte Deemed to be University,
Account No.: 110047322915, Type of Account: Saving Bank, Bank: Canara Bank, Branch: Nitte,
IFSC: CNRB0010115; MICR: 576015041

Accommodation: Twin sharing accommodation on payment basis can be provided only to outstation participants in the college campus on a first come first serve basis, on prior request.