

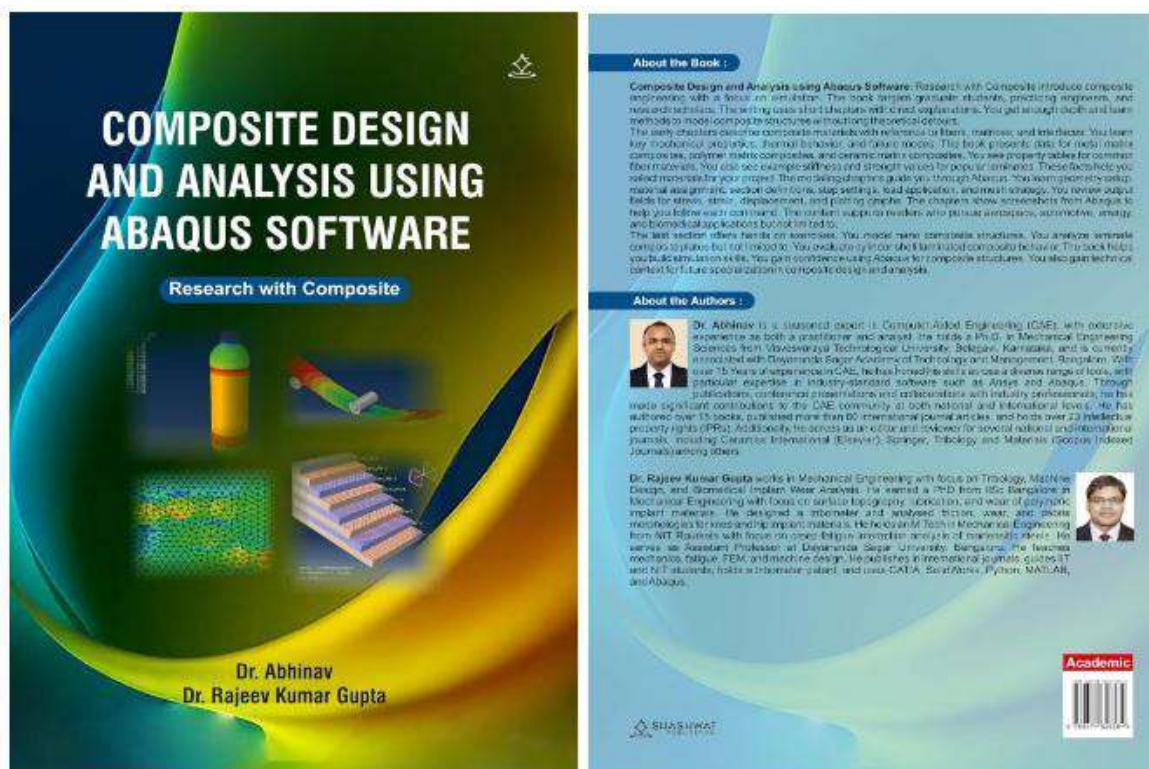


Newsletter for February 2026
Department of Mechanical Engineering
Dayananda Sagar University
Bengaluru-562112



Dr. Rajeev Kumar Gupta

Dr. Rajeev Kumar Gupta, Assistant Professor, Mechanical Engineering Department Published his 1st book titled as “**Composite Design and Analysis Using ABAQUS Software**” collaboration with DSATM has been published. This book offers a comprehensive and practical approach to composite material modeling, simulation, and structural analysis using ABAQUS, blending strong theoretical foundations with real-world applications. It serves as a valuable resource for researchers, postgraduate students, and industry professionals working in composite design and finite element analysis. The book is now available on Amazon and Flipkart <https://amzn.in/d/3moigBM> , <https://dl.flipkart.com/s/OUx8G5NNNN>

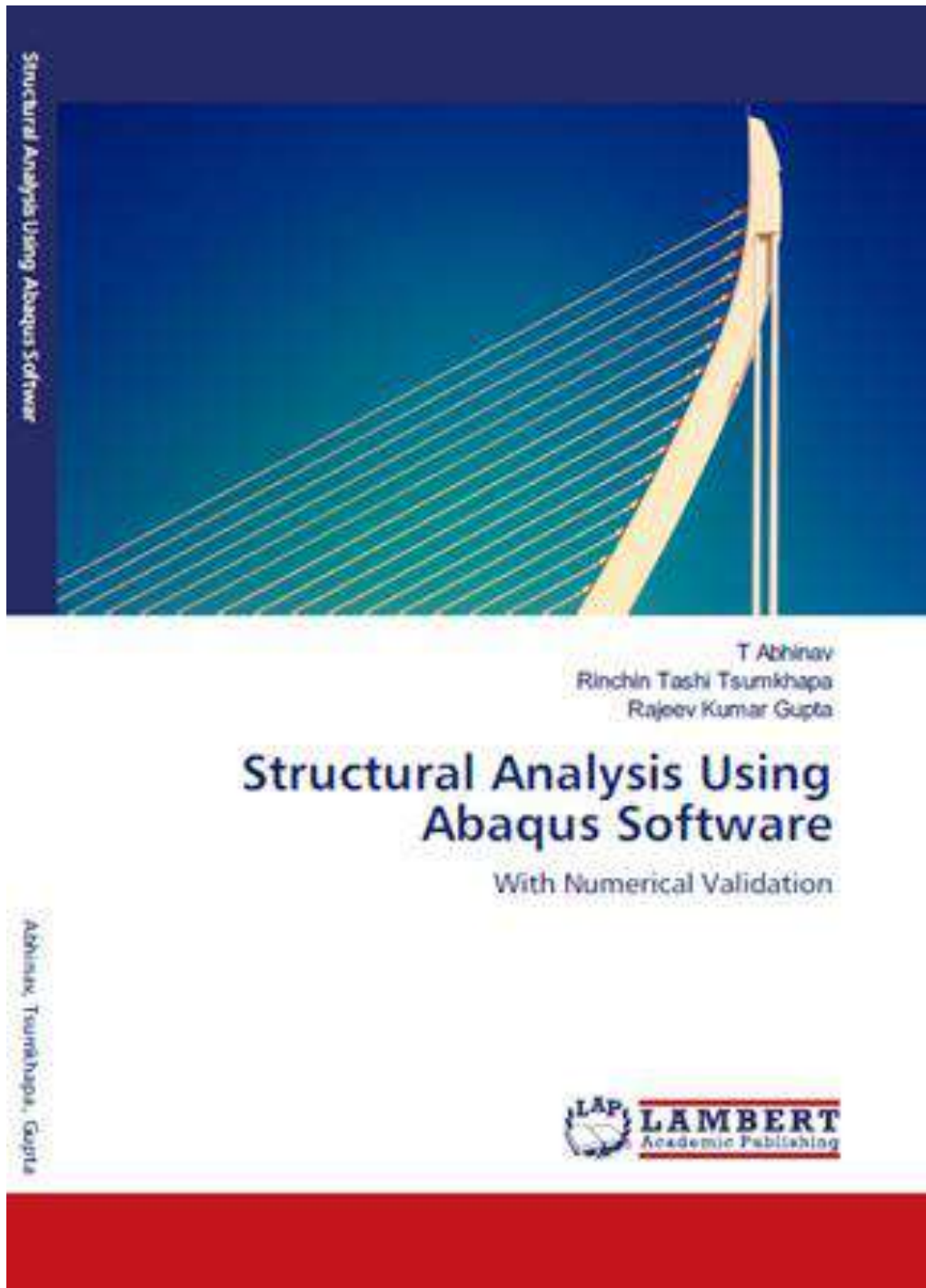






Dr. Rajeev Kumar Gupta

Dr. Rajeev Kumar Gupta, Assistant Professor, Mechanical Engineering Department published his 2nd book entitled “**Structural Analysis Using Abaqus Software with Numerical Validation**” collaboration with **DSATM Bengaluru** and **Rajiv Gandhi Government Polytechnic College, Itanagar** has been published. This book provides fundamental structural analysis concepts through seven core problems in Mechanics of Materials with detailed simulations using Abaqus and analytical validation. It enhances conceptual understanding and develops practical structural analysis for real-world engineering applications. It serves as a valuable resource for researchers, postgraduate students, and industry professionals working in structural design. The book is now available online
http://www.morebooks.shop/bookprice_offer_c6e3ef8153a8d50cab4053cd005835e44157ebbc





Dr. PMG Bashir Asdaque, Dr. Rahul Kumar, Dr. Rajeev Kumar Gupta and Dr. Joy Mondal, Assistant Professor, Mechanical Engineering Department published a patent entitled “Modular Pedal-Powered Agricultural Multi-Tool System with Torque Amplification and Quick-Swap Interfaces”.

21/02/2026, 19:00

Intellectual Property India



Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

Application Details

APPLICATION NUMBER	202641013387
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	07/02/2026
APPLICANT NAME	1 . Dayananda Sagar University 2 . Dayananda Sagar Academy of Technology and Management 3 . Dr. Abhinav 4 . P. M. G. Bashir Asdaque 5 . Rahul Kumar 6 . Rajeev Kumar Gupta 7 . Joy Mondal
TITLE OF INVENTION	Modular Pedal-Powered Agricultural Multi-Tool System with Torque Amplification and Quick-Swap Interfaces
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	lpr.personal24@gmail.com
ADDITIONAL-E-MAIL (As Per Record)	abhinavtechno5@gmail.com

<https://ipsearch.ipindia.gov.in/PatentSearch/PatentSearchViewApplicationStatus>



A faculty workshop and industrial interaction visit was organized to EPSON India pvt ltd, Bangalore to strengthen faculty exposure to modern engineering and manufacturing practices. The visit was arranged by Dr. Rani M., Director – Corporate Relations, Dayananda Sagar University. Three faculty members from Mechanical Engineering department—**Dr. Saravana Bavan, Dr. Rahul Kumar, and Mr. Karthik SB**—participated in the program. The workshop focused on advanced manufacturing systems, automation, robotics, Industry 4.0 concepts, and sustainable production practices on 13th February 2026. Faculty gained valuable insights into industrial workflows, automation integration, and collaborative research opportunities.

Impact/Outcome:

- Faculty upskilling in advanced manufacturing and automation
- Industry-aligned curriculum inputs
- Scope for joint research, internships, and training programs

The visit significantly contributed to faculty development and reinforced strategic industry-academia collaboration.





Dr. Manish Kumar Mishra,
Assistant Professor
Department of Mechanical Engineering

The paper titled “*Exploring Fractional Calculus Operators in Context with Extended Hypergeometric and Confluent Hypergeometric Function*”(1-02-2026 Published) by Ankita Chandola and Manish Kumar Mishra, published in the *TWMS Journal of Applied and Engineering Mathematics* (Vol. 16, Issue 2, 2026, pp. 214–235), investigates generalized fractional calculus operators and their applications to extended hypergeometric and confluent hypergeometric functions. The study develops new integral representations, image formulas, and operational properties that connect fractional operators with special functions. The results contribute to analytical solutions of differential and integral equations arising in applied mathematics, physics, and engineering, offering broader computational flexibility and theoretical advancement in fractional modeling frameworks.

EXPLORING FRACTIONAL CALCULUS OPERATORS IN CONTEXT WITH EXTENDED HYPERGEOMETRIC AND CONFLUENT HYPERGEOMETRIC FUNCTION: IMAGE FORMULAS AND APPLICATIONS

A. CHANDOLA¹, M. KUMAR MISHRA^{2*}, §

ABSTRACT. Fractional calculus in mathematics has various applications in engineering and science, inequality theory and is also used in solving various integral equations. In the past few years, fractional calculus operators that contains different special functions have been discussed by many researchers. In our paper, our objective is to discuss image formulas for different fractional integral and differential operators using the extended hypergeometric and extended confluent hypergeometric function involving Appell series and Lauricella function. Fractional calculus operators that has Appell function in the kernel and Saigo fractional operator are used in this paper. The results investigated in this manuscript are general, novel and are used to discuss various special cases and more fascinating results involving other special functions and fractional calculus operators. We have also discussed the application and future scope along with a brief comparison with the existing literature.

Keywords: Image formula, Extended hypergeometric function, Extended confluent hypergeometric function, Fractional calculus, Saigo fractional operator.

AMS Subject Classification: 26A33, 33B15, 33C05, 33C15, 33C99

1. INTRODUCTION

Fractional Calculus in mathematics involves the investigation of derivatives and integrals of any arbitrary order, real or complex. The subject has gained a lot of admiration and acceptance in last few decades because of its different applications in the areas of science and engineering like visco-elasticity, optics, oscillation, diffusion, electrochemistry, wave propagation and various others. (see, e.g., [1, 2, 6, 7, 4, 3, 5]). It was around eighteenth century when several mathematicians, namely Fourier, Abel, Liouville, and Riemann were

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§ Manuscript received: December 30, 2024; accepted: April 28, 2025.

TWMS Journal of Applied and Engineering Mathematics, Vol.16, No.2; © Işık University, Department of Mathematics, 2026; all rights reserved.



Dr. P M G Bashir Asdaque, Assistant Professor in the department of Mechanical Engineering has published a research article on slender power-transducer in the AIP Conference Proceedings (SCOPUS-indexed). The paper was communicated through the conference MEICON-1.0 organized by O P Jindal University. Coauthors are Dr. Rahul Kumar and Dr. Joy Mondal of Mechanical Engineering Department.



AIP Conference Proceedings

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RESEARCH ARTICLE | FEBRUARY 20 2026

Modelling of geometrically nonlinear and electro-mechanically coupled piezoelectric based slender power transducers

P. M. G. Bashir Asdaque ; Rahul Kumar; Joy Mondal

— [Author & Article Information](#)

P. M. G. Bashir Asdaque ^{a)}, Rahul Kumar ^{b)}, Joy Mondal ^{c)}

Dayananda Sagar University, Harohalli, Ramanagara, Karnataka, India



Dr. P M G Bashir Asdaque, Assistant Professor in the Department of Mechanical Engineering has attended the 5-day FDP on “Application of AI/ML in Mechanical Engineering” from Feb-02-06, 2026 organized by reputed central government institute IIST, Kolkata.



ভারতীয় প্রকৌশল বিজ্ঞান এবং প্রযুক্তিবিদ্যা প্রতিষ্ঠান, শিবপুর
भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिवपुर
INDIAN INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY, SHIBPUR
Erstwhile B E College (Estd 1856)

Certificate of Participation

This is to certify that **P M G Bashir Asdaque**, from **Dayananda Sagar University Bangalore** has attended the Five-Day Online Faculty Development Program on “**Application of AI/ML in Mechanical Engineering**” from February 02 - 06, 2026, organised by the Department of Mechanical Engineering, Indian Institute of Engineering Science and Technology Shibpur, Howrah, West Bengal, India-711103.

Subhas Chandra Mondal

Prof. Subhas Chandra Mondal
Coordinator

Mukesh Kumar

Dr. Mukesh Kumar
Coordinator

Kush Kumar Dewangan

Dr. Kush Kumar Dewangan
Coordinator



Dr. Ravitej Y P

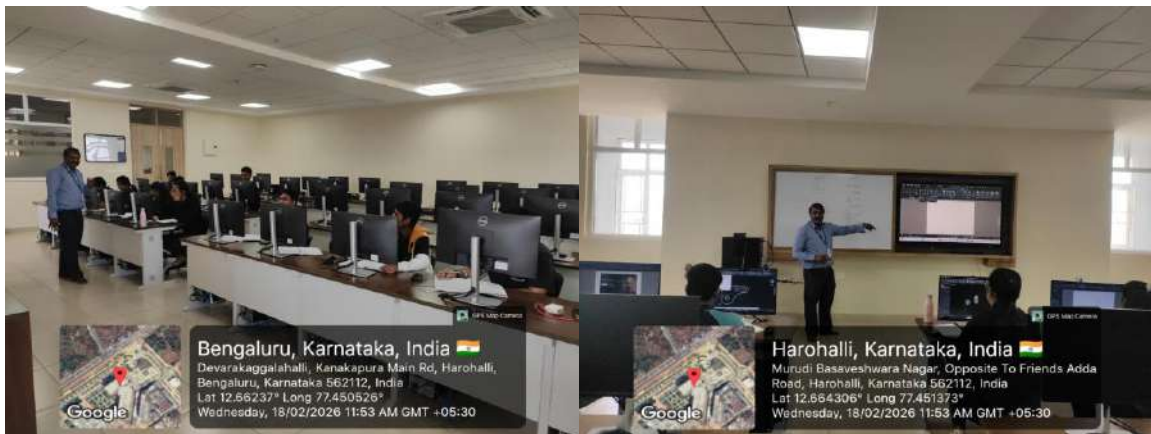
Dr. Ravitej Y P, Mechanical Engineering Department, Dayananda Sagar University provided outstanding peer-review contributions to Physical Science International Journal during the 2025–2026 academic year. It acknowledges dedication to maintaining research quality, supporting scholarly publication standards, and advancing physical science research through rigorous and responsible reviewing.





The Department of Mechanical Engineering, School of Engineering, DSU, successfully conducted a comprehensive Corporate Training Program on Autodesk Inventor and AutoCAD for Graduate Engineer Trainees from Bühler India from 16th February to 28th February 2026. The intensive two-week program was led by **Dr. Shashidhar L C**, Manager of the Autodesk Design & Innovation Lab, and **Dr. Vinay M S**, Assistant Professor, Department of Mechanical Engineering. The sessions were thoughtfully structured to enhance the trainees' expertise in advanced 3D modeling, parametric design, assembly modeling, and detailed drafting using Autodesk Inventor, along with precision 2D drafting and documentation practices in AutoCAD.

The trainers combined conceptual instruction with extensive hands-on practice, ensuring that participants gained practical exposure to real-world mechanical components and industrial design workflows. The interactive and application-oriented approach adopted by the trainers enabled the graduate engineer trainees to strengthen their technical competency and industry readiness, further reinforcing the collaborative engagement between DSU and Bühler India.





**Dayananda Sagar
University** Bengaluru



DEPARTMENT OF MECHANICAL ENGINEERING
Autodesk Design & Innovation Lab.
Corporate Training on Autodesk Inventor & AutoCAD
For **GET'S FROM BUHLER ACADEMY**
13TH BATCH

To Empower Innovators with Design

**16-02-2026 to 28-02-2026**

**TIME**
9.30 AM – 4.00 PM

TRAINER
Dr. Shashidhar L C
Dr. Vinay M S

VENUE
Lab 307, 3rd Floor, Block-A
Dayananda Sagar University,
DSU Main Campus:
Devarakaggalahalli, Harohalli,
Kanakapura Road,
Bengaluru South Dt. – 562 112





Dr. Rajesh Ranjan Ravi, Assistant professor, Mechanical Engineering Department successfully participated in the FDP focused on advanced concepts and industrial practices in Additive Manufacturing (AM) and rapid tooling. It comprehensively covered the 3D printing workflow, including CAD model preparation, slicing, machine setup, parameter selection, and optimization of part orientation, layer height, and infill density (13.02.2026 – 14.02.2026 at CIPET: SARP - APDDRL, Bengaluru). Major AM technologies, such as FDM/FFF, SLA, SLS, Polyjet, and Multi Jet Printing, were discussed, along with the material properties of ABS, PC, Nylon, and ULTEM. Emphasis was placed on Design for Additive Manufacturing (DfAM), defect analysis, and comparisons with injection molding and vacuum casting. Hands-on sessions included silicone mold preparation, vacuum degassing, casting, post-processing, quality inspection, and hybrid manufacturing integration.

CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY (CIPET) केन्द्रीय पेट्रोसायन अभियांत्रिकी एवं प्रौद्योगिकी संस्थान (सिपेट) (Formerly Central Institute of Plastics Engineering & Technology) (Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India) HEAD OFFICE : GUINDY, CHENNAI - 600 032.		
CIPET: SARP-APDDRL, BENGALURU	Certificate No.: A 232891	
CERTIFICATE / प्रमाणपत्र		
<i>This is to certify that</i> RAJESH RANJAN RAVI		
<i>Slr / Smt. / Ms.</i> JAINATH PRASAD YADAV		
<i>S/o / D/o / W/o</i> has successfully completed the training programme titled "ADVANCEMENTS IN 3D PRINTING AND VACUUM CASTING"		
(18 Hours)		
Organized at CIPET: SARP-APDDRL, BENGALURU	from 13/02/2026	to 14/02/2026
Date: 14/02/2026	COURSE COORDINATOR	TRAINING I/C - VTC
		CENTRE HEAD



On **10 February 2026**, the Department of Mechanical Engineering at **Dayananda Sagar University – School of Engineering (DSU–SoE)** commemorated **World Wetlands Day** by organizing an educational field visit to **Mavathur Lake**, located along Kanakapura Road. The visit was coordinated by **Abhijith N**, Assistant Professor and NSS Coordinator of the Mechanical Engineering Department. Second- and third-year Mechanical Engineering students actively participated in the field visit. During the program, faculty members explained the ecological and environmental importance of wetlands, emphasizing their role in **groundwater recharge, flood control, biodiversity conservation, and natural water filtration**. Students also gained insights into how wetlands sustain diverse ecosystems and support various plant and animal species. The visit further highlighted the **impact of human activities on wetland ecosystems** and underscored the importance of adopting **sustainable conservation practices** to protect these vital natural resources. The program encouraged students to develop a sense of responsibility toward safeguarding and preserving natural water bodies for future generations. The students were accompanied by **Dr SaravanaBavan**, Chairman of the Department; **Vinayak B Hemadri**; **Abhilash O**, Assistant Professor; and **Jayappa B C**, Instructor from the Department of Mechanical Engineering, who guided and supported the students throughout the visit.



Short Visit to Mavathur Wetland and Adanakuppe, Kanakapura hobli

An NSS activity Organized by
DEPARTMENT OF MECHANICAL ENGINEERING
On 10/02/2026





Dr. Vinay M. S., Assistant Professor, Mechanical Engineering Department, Dayananda Sagar University participated in the six-day Faculty Development Program on additive manufacturing at Manipal Institute of Technology, under Manipal Academy of Higher Education, in association with National Centre for Additive Manufacturing, focusing on fundamentals, advancements, and future opportunities in additive manufacturing technologies.

