

**About the Institute:**

**NMAM Institute of Technology** was established in 1986. The college is affiliated to the Visvesvaraya Technological University, Belgaum and is recognised by the All India Council for technical Education, New Delhi. Institute is accredited by National Assessment & Accreditation Council [NAAC] & all the programs are accredited by National Board for Accreditation [NBA]. Institute is certified to the ISO 9001-2008 standards for quality education by NVT Quality Certifications (ANAB accredited). The institution has been granted Academic Autonomy under the Visvesvaraya Technological University from 2007-08.

The Institute offers graduate programs in 7 branches of Engineering - Electronics & Communication Engineering, Computer Science & Engineering, Civil Engineering, Electrical & Electronics Engineering, Information Science & Engineering, Bio-Technology and Mechanical Engineering. The college also offers postgraduate programs like, Master of Technology, Master of Computer Applications and Master of Business Administration. Besides these, students can also pursue their doctoral programs at the Institute.

**About the Department:**

The Department of Mechanical Engg., started in 1986 with an intake of 60. Today the department has an intake of 180 with faculty strength of 46. The Department offers a UG programme in B.E in Mech Engg. and 2 PG programmes - M.Tech in Energy Systems Engg. and Machine Design with an intake of 18 students. The Department is also a recognized research centre under VTU, with 8 guides and more than 15 PhD students both internal and external. The department has developed Center for Alternative Fuels Research, **Center for System Design, Fabrication and Testing, Center for Tool based Micromachining Research**, Center for Condition Monitoring and Advanced Machining Research. The department has excellent infrastructural facilities in terms of class rooms and laboratories. The faculty members are engaged in research activities with sponsored research projects worth more than ₹ 90 lakhs being executed. The department has excellent research output in terms of publications in refereed International Journals and prestigious national and international conferences, with a total number of 75 publications in the last 3 years. The students of the department have been placed in leading companies.

Many faculty have won several awards and sponsorships for attending and conducting seminars and conferences.

**Preamble**

Piezoelectric actuator is one of the most promising actuator of the future due to its fast response, compact design, high force generation, high resolution and low wear and tear. However, piezoactuator produce only 0.1% strain which will limit their application to micro and nano positioning devices. Further, piezoelectric actuators exhibit hysteresis behaviour between the applied voltage and resulting displacement and hence requires a closed loop position controller.

This workshop mainly focusses on addressing the two limitations of the piezoelectric actuators mentioned above. The displacement of the piezoelectric actuator can be increased by incorporating flexural displacement amplification mechanism, piezo-stepping mechanisms, inchworm mechanisms and by using piezomotors. The hysteresis behaviour of the piezoactuators can be modelled and compensated for accurate position control. The workshop will also discuss the new applications of piezoelectric actuators.

**Objective:**

The main objectives of the workshop are

1. To discuss the different applications of piezoelectric actuators
2. To discuss the modelling and simulation techniques used to model the behaviour of piezoelectric actuators
3. To discuss the design and fabrication of flexurally amplified piezoactuator and pre-stressed piezoactuators

**Topics to be covered**

It is proposed to cover the following topics

- Introduction to piezoelectric actuators and their applications
- Design fabrication and testing of flexurally amplified piezoelectric actuators
- Modeling and simulation of hysteresis behaviour of piezoelectric actuators
- Design, Fabrication and testing of structural stiffeners for piezoelectric actuators
- Design of voltage amplifiers for piezoelectric actuators
- Application of piezoelectric actuators in micro/macro pump.

TWO DAYS  
FACULTY DEVELOPMENT PROGRAMME  
ON

**MODELING, SIMULATION AND APPLICATIONS OF PIEZOACTUATORS**

(TEQIP-II Funded)

**MARCH 20 - 21, 2017**

**REGISTRATION FORM**

Name :.....

Designation :.....

Highest Qualification :.....

Affiliation :.....

Department :.....

Telephone No. :.....

Email :.....

Accommodation required or not :.....

DD Details :.....

Signature :.....

**DECLARATION BY THE PARTICIPANT**

The information furnished above is true to the best of my knowledge. If selected, I shall attend the programme for the entire duration. I also undertake the responsibility to inform the coordinator sufficiently in advance, in case I am unable to attend the programme.

Date :

Place :

Endorsement by the Head of the Institution:

**Patron :**

Shri N. V. Hegde  
President, NET, Mangalore

**Chairman :**

Dr. Niranjana N. Chiplunkar  
Principal

**Organizing Chairman :**

Dr. Shashikantha Karinka, Professor & Head

**Advisors :**

Shri Yogesh Hegde, Registrar  
Dr. Ramesh R. Mithanthaya, Vice Principal & Dean  
Dr. Srinivasa Rao B. R., Vice Principal & COE

**Coordinators :**

Dr. Muralidhara  
Mr. T. R. Venugopal  
Mr. Veerasha R. K.  
Mr. Divijesh P.

**Organizing Committee :**

Mr. Ajith Hebbale  
Mr. Bhaskar Achar P.  
Mr. Gururaj Upadhyaya  
Mr. Grynal D'Mello  
Mr. Gautam Hebbar  
Mr. H. S. Kumar  
Mr. Manjunath Maiya  
Mr. Nithin Kumar  
Mr. Aneesh Jose  
Mr. Rajath N. Rao  
Mr. Srinivas Prabhu  
Mr. Vincent

**Participants :**

Faculty from engineering colleges, PG students and Ph.d Research Scholars (Mechanical, E&E, E&C) can attend the workshop. Maximum number of participants is restricted to 30. Selection is on First-cum-First Served basis.

**Resource Persons:**

Scientist from RCI Hyderabad, Professor from NITK and personnel from Piezoactuator Industry.

**Registration :**

The interested participants are requested to send the attached registration form along with DD of ₹ 1000/- for faculty, research scholars and ₹ 2000/- for Industry Participants to the Coordinator. The DD should be drawn in favour of "The Principal, NMAMIT, Nitte", Payable at Syndicate Bank, Nitte.

**Accommodation :**

Limited accommodation (free) is available in PG hostel (twin sharing) on a first-cum first served basis.

**Important dates :**

Last Date of Receipt of Application : 10<sup>th</sup> March  
Intimation about Selection : 13<sup>th</sup> March  
(Only through e-mail)  
Last Date for confirmation by participant : 15<sup>th</sup> March

**CONTACT FOR INFORMATION**

Please address all communications to the coordinators.

**Dr. Muralidhara**

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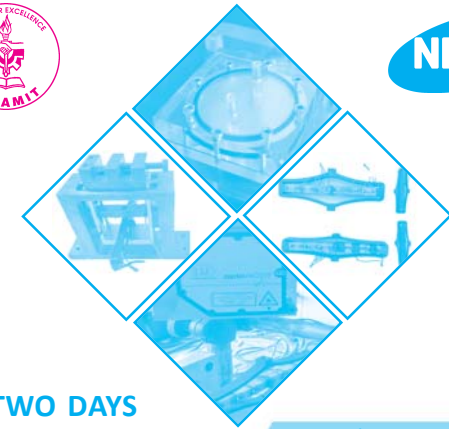
OR

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**NITTE**



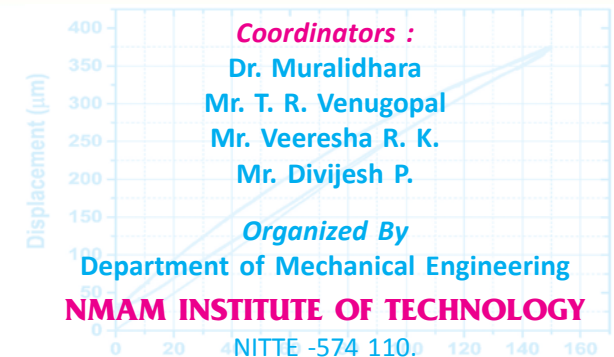
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