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*SIDHARTHA INSTITUTE OF SCIENCE & TECHNOLOGY  
NARAYANAVANAM ROAD, PUTTUR.*

## *DEPARTMENT OF MECHANICAL ENGINEERING*

# M-EOLAS

### **ABOUT THE DEPARTMENT**

The Department of Mechanical Engineering in Siddhartha Institute of Science and Technology (SISTK) was established in 2012-2013 with an intake of 60. In a year 2013-2014 Intake has been increased to 120 students. The department is continuously Striving to achieve excellence in education, academic and Industry oriented research, with perfect blend of Intellectual and practical experiences.

### **VISION:**

Mechanical Engineering is one of the largest, broadest and oldest engineering disciplines. It finds its application in every branch of industry, including aerospace, manufacturing, automotive, building systems, energy, chemical and high-technology sectors. To be a centre of excellence in the field of Mechanical Engineering where the best of teaching, learning and research synergize.

### **MISSION:**

To prepare effective and responsible graduate and engineers for global requirements by providing quality education. Motivating students to excel by augmenting their knowledge to continuing education programme. Conduct basic and applied research and to generate intellectual property.

### **HOD MESSAGE:**

A very warm welcome to the website of the Department of Mechanical Engineering, happens to be the back bone of any industry with amazing versatility. The department of Mechanical Engineering strives to train students in mechanical engineering science as well as application of these scientific methods to conceive, organize and carry out scientific design of engineering system.

The department of Mechanical Engineering has started from the session 2012-13. The department has well-equipped labs to impart sound practical knowledge of the subject. This department has dedicated and competent faculty members to impart quality education, project guidance, personality development to enable them to be placed with a reputed organizations.



**D.SUDHAKARA**  
HOD  
MECH Dept.

"Education is the most powerful weapon which you can use to change the world".

-Nelson Mandela

Confidence and Hard-Work is the Best Medicine to kill the disease called Failure. It will make you a Successful Person

-A.P.J. Abdul Kalam

### AUTOSHOW:

Our Department Students attended Autoshow at Annamacharya Institute of Technology and Sciences, Tirupathi (AITS) Students gain Technical Knowledge on Assemble and Disassemble of I.C. Engines. Experts Demonstrated about the working processes of 4-Stroke SI & CI engines by using cut-section models.



Autoshow Attended by the Students at Annamacharya Institute of Technology and Sciences, Tirupathi

### FACULTY ACHIEVEMENTS:

#### INTERNATIONAL JOURNALS:

- A.Syam Prasad, BVVVB Lakshmipathi Rao, A Babji, Dr P Kumar Babu (2013) "**Static and Dynamic Analysis of Centrifugal Pump Impeller**", International Journal on Scientific and Engineering Research(IJSER-ISSN2229-5518), Vol.4, IssueNo.9, September 2013 edition.
- D. Sudhakara, Dr. G.Prasanthi (2013) "**EXPERIMENTAL INVESTIGATION OF OPTIMIZATION OF PROCESS PARAMETERS OF WIRE CUT EDM BY TAGUCHI METHOD**" International Journal Of Advanced Manufacturing Technology, JAMT-D-13-00863 (Under Review).
- D. SUDHAKARA, Dr. G.PRASANTHI (2013) "**REVIEW OF RESEARCH TRENDS: PROCESS PARAMETRIC OPTIMIZATION OF WIRE ELECTRICAL DISCHARGE MACHINING**" ICAMS2014, (under review)

## CONFERENCES:

- N.Sreedhar, G.Ravindra Reddy, Dr P Kumar Babu(2013), “**CFD Analysis of a Multistage Launch Vehicle with Strapons on Flow Simulsation**” , National Conference on “Innovations in Mechanical Engineering- NCIME-13 organized by Madanapalle Institute of Technology and Science (MITS), Madanapalle, Andhra Pradesh during 21-22, June 2013.
- S.Jayakishore , M.Lavakumar , Dr P Kumar Babu(2013), “**DESIGN AND ANALYSIS OF MULTIPLATE CLUTCH BY USING FEM**, National Conference on Advances in Mechanical Engineering (NCAME) organized by Vignan University,Vadlamudi\,Guntur,Andhra Pradesh on 5-6 April 2013.
- D.Sudhakara. Harinath Gowd, B.Sreenivasulu (2013), “**EXPERIMENTAL ANALYSIS OF SURFACE CHARACTERISTICS OF HOTVAR (HOT DIE STEEL)**” USING WEDM at national conference on " Innovations in Mechanical engineering" 21st and 22nd June 2013, page no: 235-242.
- D.Sudhakara, N.Venkata Ramana Reddy (2013), “**EXPERIMENTAL INVESTIGATION OF MRR AND SURFACE ROUGHNESS OF ALLOY STEEL - H13 USING TAGUCHI METHOD**” , at National conference on " Innovations in Mechanical engineering" 21st and 22nd June 2013, page no:257-263.

## WORKSHOPS:

- Attended Two day International Workshop on “Role of Material Science in Engineering and Medicine” organised at Krishna Theja Technical Campus, Tirupati during 1<sup>st</sup> and 2<sup>nd</sup> October 2013.
- D.Sudhakara Attended Two day International Workshop on “ MAT Lab Based Advanced Optimization Techniques” organised at Sree VIdyanikethan Engineering College (Autonomous) during 07-08th November,2013.

## UNIVERSITY RESULTS:

S.No	NAME	ROLL NO	YEAR	PERCENTAGE
1	Karuru Rajasekhar	124E1A0340	I YEAR	83.4%
2	M.Yogesh	124E1A0358	I YEAR	78.4%
3	Shaik Ashfack	124E1A0304	I YEAR	78.1%
4	A.J.Nishanth	124E1A0332	I YEAR	75.2%
5	Kolluru Durga	124E1A0311	I YEAR	74.8%

Mech Dept

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*Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.*

*-Albert Einstein.*

**Chief Editor: Mr. D.SUDHAKARA**

**M.Tech (Ph.D)**

**HOD & Associate Professor**

**Editor : Mr. JAYAKISHORE.S**

**Assistant Professor**

**Ms. O.KAVITHA**

**Assistant Professor**

**Technical Paper:**

**TRENDS IN MICRO TECHNOLOGIES:**

**Nice Stories:**

- *Once, all villagers decided to pray for rain, on the day of prayer all people gathered and only one boy came with an umbrella*

*'That's Faith'*

- *Feeling of a One Year old baby. When you throw him in the air, he laughs because he knows you will catch him.*

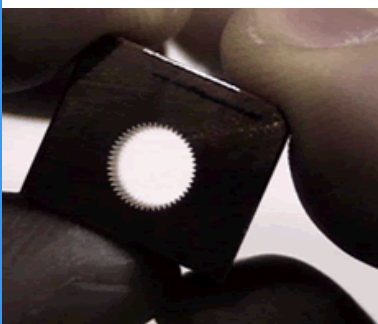
*'That's Trust'*

- *Every night we go to bed, we have no assurance to wake up alive the next morning but still we set alarm for tomorrow*

*'That's Hope'*

Over the past several years there has been an increased interest in micro machining technology that has captured the imagination of every manufacturing and industry segment; from aerospace, medical appliance and the automotive world, the potential for product miniaturization continues to grow and while posing numerous technical challenges.

The manufacture of miniature parts is not new. Many companies have used various machining technologies such as EDM and laser to produce micro details for many years. The difference today is the sheer volume of products that require micro machining. The accelerated rate of change is unbelievable.



**CHALLENGES OF MICRO MACHINING :**

Maintaining control of all of the machining variables, Including the machine tool, work and tool-holding, the environment, cutting tools or electrodes will all have a huge cumulative effect on the end result.

There are several key areas of concern when machining details this small.

**SUBMICRON TOOLING:**

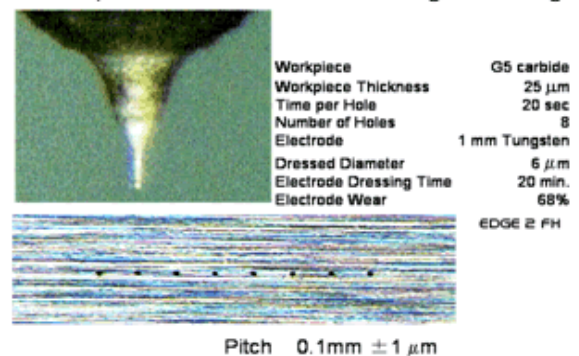
Precision work and tool (electrode) holding systems capable of positional repeatability in the 1 micron range have been commercially available since the late 1980's. Originally designed for the EDM industry, these systems are highly reliable, even in the harsh EDM environment, and are now found on virtually every type of machining system.

**CONCLUSIONS:**

Micron and sub-micron manufacturing requirements will continue to grow offering unique challenges and immense opportunities to a wide group of manufacturers.

For these systems to perform successfully in the "Real World" requires cooperation and imagination on everyone's part.

**11  $\mu$ m EDM'd Holes with Discharge Dressing**



Demonstrates the ability to EDM micro holes using discharge dressing

*Assistant Professor*