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Department of Mechanical Engineering

RVR & JC College of Engineering, GUNTUR - 522 019

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ROLE OF ENTERPRENEURESHIP IN THE CURRICULUM:

The Indian economy, if it is to remain competitive, needs more entrepreneurial people. It needs people in every walk of life to behave much more entrepreneurially. In particular it needs the creativity and energy of its young people.

Entrepreneurship, in its widest sense, is any enterprise or effort that adds value to the lives of the people on which it has an impact. Entrepreneurial people take calculated risks in order to progress projects that make a difference to the lives of people. Change that adds value to people's lives, lies at the heart of entrepreneurship. One of the most popular ways in which entrepreneurship is understood is in the area of new business venturing. In this context the emphasis is on business start-ups and on identifying and helping those with the determination to do so to develop the competencies to set up and manage a business enterprise. Entrepreneurship
is also crucial within larger, more established companies. If such businesses are to remain competitive, given the dynamics of current markets, then they need to find ways of maintaining the entrepreneurial effort of the business. Entrepreneurial people are equally important in the area of social and community renewal and development. In each of these contexts, that of new business venturing, enterprise development and social entrepreneurship, there is a need for people who have been encouraged to think and behave in entrepreneurial ways and who have the competencies to solve problems and manage change, often in the face of great difficulties and opposition. Entrepreneurial people are innovative problem solvers. They are opportunity focused, calculated risk takers, people who are comfortable with change and frustrated with the status quo. They are strong communicators, effective negotiators and strong team players. They are people who can combine essential attitudes, such as tolerance of risk and uncertainty and low fear of failure, with managerial competencies in such a way that helps them make a difference.

Young people right across the India need to be helped to identify and develop these attitudes as well as to develop appropriate managerial competencies if they are to stand a chance in the world of work, of new venturing or community development. Recent research and numerous government initiatives have endorsed this fact and sought to stimulate a greater engagement with the entrepreneurship agenda across all sectors. They have suggested that the education sector at every level could do much more to build the awareness of students about entrepreneurship and to encourage their greater engagement with it. The fact is that the vast majority of students at the end of their education careers will seek to find employment in established enterprises, be they private, public or community. Only a few will take the new venturing option.

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Will need to be given some insights to who the entrepreneur is, what it is he or she does and how the entrepreneurial process might be understood. They will need to be allowed to experiment with their own entrepreneurial potential and to explore in how many ways they might be entrepreneurial themselves, people who make a difference.

If students throughout the education sector are to be encouraged to engage with entrepreneurship and to explore their entrepreneurial credentials then this has to be done,in the first instance, through curriculum development. The key challenge to those within the education system from Education Managers through to course planners and those directly involved in curriculum development is to examine how key learning outcomes for entrepreneurship might be introduced to and embedded throughout programmes of learning from school, to further and ultimately higher education.

There is a urgent need to increase the awareness among students within the Science, Engineering and Technology and to encourage their engagement with it. This has largely been achieved through an intensive curriculum strategy combined with business enterprise competitions. The impact has been impressive. Experience suggests that this approach of seeking to embed the agenda within the curriculum is the most effective approach to draw out the latent entrepreneurial potential of students. Much more needs to be done.

Technical Article

Swarm Intelligence

Swarm intelligence is the discipline that deals with natural and artificial systems composed of many individuals that coordinate using decentralized control and self-organization. In particular, the discipline focuses on the collective behaviors that result from the local interactions of the individuals with each other and with their environment. Examples of systems studied by swarm intelligence are colonies of ants and termites, schools of fish, flocks of birds, herds of land animals. Some human artifacts also fall into the domain of swarm intelligence, notably some multi-robot systems, and also certain computer programs that are written to tackle optimization and data analysis problems.

Studies and applications of Swarm intelligence

Ant Colony Optimization

Ant colony optimization (Dorigo, Maniezzo and Colorni 1991; Dorigo and Stützle 2004) is a population-based metaheuristic that can be used to find approximate solutions to difficult optimization problems. It is inspired by the above-described foraging behavior of ant colonies. In ant colony optimization (ACO), a set of software agents called "artificial ants" search for good solutions to a given opti mization problem transformed into the problem of finding the minimum cost path on a weighted graph. The artificial ants incrementally build solutions by moving on the graph. The solution construction process is stochastic and is biased by a pheromone model, that is, a set of parameters associated with graph components (either nodes or edges) the values of which are modified at runtime by the ants.

Particle Swarm Optimization

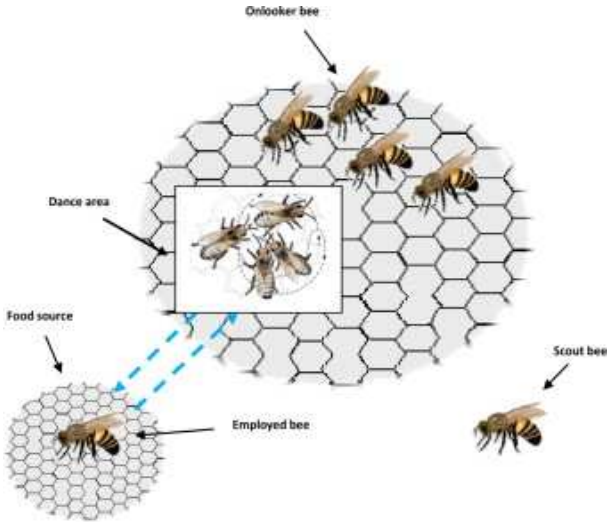
Particle swarm optimization (Kennedy and Eberhart 1995; Kennedy, Eberhart and Shi, 2001) is a population based stochastic optimization technique for the solution of continuous optimization problems. It is inspired by social behaviors in flocks of birds and schools of fish. In particle swarm optimization (PSO), a set of software agents called particles search for good solutions to a given continuous optimization problem. Each particle is a solution of the considered

problem and uses its own experience and the experience of neighbor particles to choose how to move in the search space. In practice, in the initialization phase each particle is given a random initial position and an initial velocity. The position of the particle represents a solution of the problem and has therefore a value, given by the objective function. While moving in the search space, particles memorize the position of the best solution they found. At each iteration of the algorithm, each particle moves with a velocity that is a weighted sum of three components: the old velocity, a velocity component that drives the particle towards the location in the search space where it previously found the best solution so far, and a velocity component that drives the particle towards the location in the search space where the neighbor particles found the best solution so far. PSO has been applied to many different problems and is another example of successful artificial/engineering swarm intelligence system.

Cooperative Behavior in Swarms of Robots

There are a number of swarm behaviors observed in natural systems that have inspired innovative ways of solving problems by using swarms of robots. This is what is called swarm robotics. In other words, swarm robotics is the application of swarm intelligence principles to the control of swarms of robots. As with swarm intelligence systems in general, swarm robotics systems can have either a sc entific or an engineering flavour. Clustering in a swarm of robots was mentioned above as an example of artificial/scientific system. An example of artificial/engineering swarm intelligence system is the collective transport of an item too heavy for a single robot, a behavior also often observed in ant colonies.

ABC algorithm



The Artificial Bee Colony (ABC) algorithm is a swarm based meta-heuristic algorithm that was introduced by Karaboga in 2005 (Karaboga, 2005) for optimizing numerical problems. It was inspired by the intelligent foraging behavior of honey bees. The algorithm is specifically based on the model proposed by Tereshko and Loengarov (2005) for the foraging behaviour of honey bee colonies. The model consists of three essential components: employed and unemployed foraging bees, and food sources. The first two components, employed and unemployed foraging bees, search for rich food sources, which is the third component, close to their hive. The model also defines two leading modes of behaviour which are necessary for self-organizing and collective intelligence: recruitment of foragers to rich food sources resulting in positive feedback and abandonment of poor sources by foragers causing negative feedback.

Staff Corner

Research Papers Published in Journals

- **G.Chaitanya ,** J.Suresh Kumar and **Kolla Srinivas,** "Optimization of Axial flow Compressor stage using NSGA-II Technique", ARPN Journal of Engineering & Applied Sciences , Vol 5, No:12 , pp 1-5. ISSN :1819-6608.

K.R.Kotaiah**,** K.J.Babu, **Kolla Srinivas,** "The Imapct of cutting conditions on cutting forces and chatter length for steels and aluminium", The Journal of Institution of Engineers, India, Mechanical Engineering Division , Vol91. Pp3-10,April 2010.

- **N.Govind ,** D.Nageswara Rao , N.Ramanaiah , " Effect of micro structural changes on mechanical properties of friction stir welded Nano SiC reinforced AA6061 Composites" , International Journal of Engineering Science and Technology(IJEST) , Vol2(11), 2010 . 6491-6499. ISSN : 0975-5462**.**

Research Papers Published in Seminars/Conferences/Workshops(with ISBN no):

- **D.Sameer Kumar , Dr. V.C. Das , Dr. K.Ravindra** , "Optimization of process parameters on AWJC of INCONEL690 using Ant Colony Optimization" , proceedings of Golden jubilee National Conference on Recent Advances in Manufacturing (RAM2010), at SVNIT , Surat , during 19-21 July 2010.pp 96-102.ISBN: 978-93-80697-05-5.

Intelligent Bike Concept

cyclist chris boardman unveiled his latest cycle concept to the world's media yesterday. the new 'intelligent' bike counts calories as you pedal, plays music and uses a solar-powered motor when you get tired.

the carbon fiber frame has an inbuilt computer system, which incorporates an 'unbreakable' locking device that allows only the owner to open it via fingerprint recognition. spoke-less wheels make the bike more aerodynamic while the tires will be puncture-proof with self-inflating tires.

Papers Published in Seminars/Conferences/Workshops :

- **B.Ramgopal Reddy** , K.Ramji and B.Satyanarayana , "Evaluation of Effective properties of CNT based Composites using Numerical Homogenization", Proceedings of 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010. pp:115-119.
- **Srinivasa Rao.G** ,Neelakanteswara Rao.A , "Tool parameters optimization using technique for order preference by similarity to ideal solution ", Proceedings of 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010. pp:301-306.
- **C.Srinivas** , K.Ramji ,B.Satyanarayana, R.naveen , **Ch.Devaraj** , "Designing the layout of single and multi-rows flexible manufacturing system by Ant Colony Optimization Meta Heuristic ", Proceedings of 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010. pp:259-264.
- **N.V.V.S.Sudheer ,** K.V.J.Rao **,G.Sreenivasa Rao** , "Optimal Cutting conditions in turning of Al/SiC MMC based on Experiment and a Linear Programming Model", Proceedings of 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010. pp:514-516.
- M.G.Krishna , **K.Praveen Kumar**,K.K.Kishore,N.B.R.Mohana Rao,J.Babu Rao, "Investigation of Copper cored Aluminum & its alloys by Direct Extrusion", Proceedings of 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010. pp:321-324.
- **K.Praveen Kumar**, M.G.Krishna , K.K.Kishore, N.R.M.R Bhargava, J.Babu Rao," Structure Property realtions of Al-Cu binary alloys & Al-Cu –Mg ternary rich alloys", Proceedings of National Confernce on Advances in Materials And Product Design AMPD-10 at Sardar Vallabhai National institute of Technology(SVNIT) , Surat during 22-23 Nov -2010 , pp:181-186.
- **Srinivas Chandana,** B.Satyanarayana, K.Ramji, R.Naveen and **B.Ramgopal Reddy** "A Genetic Algorithm Approach for the Design of Single and Multi Row Flexible Manufacturing System", Proceedings of 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam, Volume 1, pp.483-489.

- **Dr.G.Srinivasa Rao,**A.Neelakanteswara Rao, "A Genetic Algorithm approach to multi objective optimization in turning" Proceedings of 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam, Volume 1, pp.1199-1204.
- **Srinivasa Rao.G,** A.Neelakanteswara Rao , **N.V.V.S. Sudheer ,**"Performance evaluation of carbide inserts on surface roughness in hard turning", Proceedings of 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam, Volume 1, pp.647-652.
- **B.Ramgopal Reddy,** K.Ramji and B.Satyanarayana, "Prediction Of Effective Mechanical Properties Of CNT Reinforced Composites - FEA Approach " Poster Proceedings of 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam.pp:479-484.
- **Srinivas Chandana,** B.Satyanarayana, K.Ramji "Quatitative Analysis Of Automated Guided Vehicles ", Poster Proceedings of 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam. Pp 107-111.

Seminars/Workshops/Conferences attended by the Faculty :

- **Dr.V.C.Das** Professor , "QIP Short Course on Developing Tools for Biomedical Applications", organized by IIT Gowhati, during 20-24 September, 2010.
- **Dr. G.Srinivasa Rao,** Professor , "Indo-Russian Joint Workshop On Computational Intelligence and Modern Heuristics in Automation and Robotics (CIMHAR)" , organized by SVNIT , Surat during September 20-22 ,2010.
- **Dr.G.Srinivasa Rao,** professor**, B.Ramgopal Reddy, NVVS Sudheer,** Asst. Professor**, K.Praveen Kumar**, Lecturer attended 4th International Conference on Advances in Mechanical Engineering ICAME, Sardar Vallabhai National institute of Technology(SVNIT) , Surat during September 23-25,2010.
- **B.Ramgopal Reddy**, Asst. Professor, attended "International Conference on "NANO Technology - Materials & Composites for Frontier Applications" (NANOCON)during 14th & 15th October, 2010 at Bharathi Vidyapeeth Deemed University, Pune, India.
- **Dr. G.Srinivasa Rao ,** Professor attended Pre Conference Workshop of 3rd International and 24th AIMTDR conference, "Challenges in Micro and Nano Manufacturing Indian perspective in the global scenario" during December 11-12, 2010, College of Engineering, Andhra University, Visakhapatnam
- **Dr. G.Srinivasa Rao ,** Professor , **Srinivas Chandana**, **B.Ramgopal Reddy ,** Asst. Professor attended 3rd International and 24th AIMTDR conference, December 13-15, 2010, College of Engineering, Andhra University, Visakhapatnam.

Higher Degree Awarded:

Ch.Deva Raj , Lecturer , Department of Mechanical Engineering. has been awarded M.Tech degree in CAD/CAM by Acharya Nagarjuna University , Guntur, in July 2010.

Promotions to the Faculty :

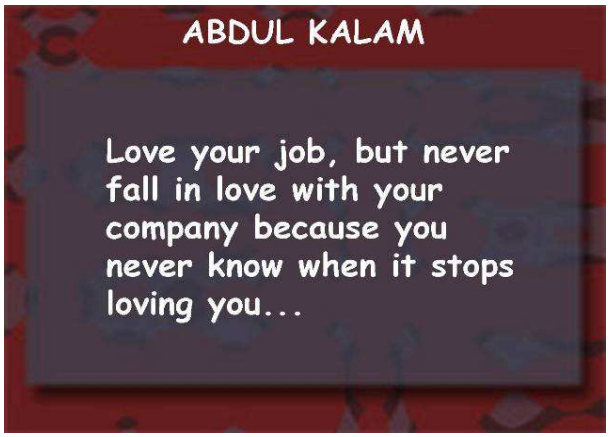
- **Dr. K.Ravindra ,** Professor, Mechanical Engineering was promoted as DEAN, Academic Affairs, w.e.f 01-09-2010.
- **Dr. Kolla Srinivas ,** Professor, Mechanical Engineering was promoted as DEAN, Student affairs, w.e.f 01-09-2010.
- **Dr. G.Srinivasa Rao**, Asst. Professor , Mechanical Engineering Department , was promoted as Professor in Mechanical Engg. Department ,w.e.f 01-07-2010.

The Faculty added to the department :

S.No	Name	Designation	Date of Joining
1	M.Vijaya	Lecturer	12-08-2010
2	C.Tara Sasanka	Lecturer	18-10-2010.

The Faculty relieved from the department :

S.No	Name	Designation	Date of Relieving
1	K. Krishna Kishore	Lecturer	11-08-2010
2	A. Sunanda	Lecturer	09-07-2010



AICTE Sponsored Seminar "Metal Matrix Composites"

Highlights

- *AICTE Sponsored 2 day National Seminar on **"METAL MATRIX COMPOSITES"** was organized **during September 29-30, 2010.***
- *The Department of Mechanical Engineering is taken prestigious to orgnaise the staff development program to enhance the knowledge base of the staff (in-house and out house)*
- *A Total 40 participants, both from academia and industry personals across the country were attended.*
- ***Dr K.Mohan Rao, Principal , VR Siddhartha Engineering College, Vijayawada** acted as chief guest and delivered a Key note Lecture.*
- *Guest Speakers both from industry and academic are attended to give basic and applicability concepts*
- ***Dr. J. Babu Rao** , Asso . Prof , Department of Metallurgy Engineering , **Dr. S. Kamaluddin** , HOD – ME , GITAM Univerity**, KKK Sanyasi Raju** , Scietist-F NSTL **, K. Pawan Kumar Jain** , ARCI Hyderabad , **Dr. K. Ravindra** , HOD ME, RVR&JCCE , **Dr. V.C. Das** , Prof ,ME Department are the speakers during the seminar*
- ***Dr. V.C. Das** , Professor & **K.Praveen Kumar** , Lecturer acted Convener & Co-Convener for the seminar.*
- *At the valedictory, the participants felt happy moments of pleasant stay and technical spirit in terms of research in the area.*

Student Corner

- **Guest Lectures organized by the Department :**
  - **"Nano materials & its applications"** by K.veerabrahmam,Scientist D, DRDL, Hyderabad . on September 4th ,2010.
  - **"Leadership"** by Air Commodore A.S.BAHAL, VM, Deputy Director General NCC Secunderabad. on December 6th ,2010.

Results Analysis

	Total Appeared	Total Passed	Pass percentage
II / IV IInd sem	142	104	73.23
Ist year	118	70	59.32

- **Industrial Tours & Short Visits :**

  - The Mechanical Engineering Department organized a short industrial visit for **IV/IV B.Tech** (A Section) students to **M/s. JOCIL Ltd**., Dokiparru, Guntur Dt during 10th August 2010.
  - The Mechanical Engineering Department organized a short industrial visit for **IV/IV B.Tech** (B Sections) students to **M/s. JOCIL Ltd**., Dokiparru, Guntur Dt during 12th August 2010.

Our Students excelles in Co – Crricular activities

N.Abhiram Y9ME918 V.Bhanu pakash Y9ME915	K.L.University	Project Exhibition/ SAMYAK-2010 8th &9th oct , 2010	***First***
U.Karthik Y9ME914 M.Mansoor Pasha Y9ME872 V.Bhanu Prakash Y9ME915 V.Saneep Varma Y9ME917	NIT,Warangal	Robo soccer /TechnozionX 24th to 26th Sept ,2010	***Second***
Nadella.Naresh Y7ME864	IIT,Guwathi	Techscribe/ Techniche 2 - 5 sept 2010	***Second***
N.Abhiram Y9ME918 V.Bhanu pakash Y9ME915	K.L.University	Project Exhibition/ SAMYAK-2010 8th &9th oct , 2010	***First***

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