Contribution of Kalyani Govt. Engineering College towards Advancement of Knowledge in the last one year

A) IIPC Cell

A full fledged 'Industry Institute Partnership Cell' established by the AICTE, New Delhi, has started functioning in the college.

B) Entrepreneurship Development Cell

An Entrepreneurship Development Cell has been started in the colllege in association with Kalyani Chamber of Commerce and Industry and other government and non government organisations.

C) Engineers' Day celebration

Engineers' Day was celebrated on 17th September, 2002. A large number of engineers from industries in and around Kalyani, teachers and students of the college attended the programme where industry *captains* addressed the gathering.

D) Workshop on Entrepreneurship Development

A two-day workshop on Entrepreneurship Development was organised on 22nd and 23rd November, 2002. Prof. Satyasadhan Chakraborty, Hon'ble Minister of Higher Education, Govt. of West Bengal., inaugurated the programme. A large number of dignitaries from banks, industries, government organisations addressed the workshop.

E) Winter School Programme

A Winter School Programme on Windows Programming : GUI sponsored by AICTE through ISTE was held during 6th January, 2003 to 16th January, 2003 in the college.

F) Workshop on E-library :

A one day workshop on 'E-library in Engineering and Technial Institutions' was successfully organised on 21st February, 2003 in the college.

G) Short term courses :

Short term courses on Computer Hardware and trade certificate courses on fitting, welding, carpentry, turning etc. have been conducted regularly in the college.

H) Visit abroad :

Prof. Samir Roy of Computer Science and Technology Department visited Japan to present research paper at the South Pacific Design Automation Conference in January, 2003.

I) Faculty members under EFIP scheme :

Five lecturers, two of Information Technology and three of Mechanical Engineering, have joined the college under the Early Faculty Induction Programme (EFIP) scheme of the AICTE.

J) R & D Projects :

Department of Computer Science & Engineering

Sl No.	Title of the project	Principal investigator	Value of the project (Rs. in lakh)
*1	Doppler Effect Imaging for Safety and Rescue	Dr. Swapan Kumar Mondal	A.I.C.T.E (4.2)
2.	Region Classification in Remote Sensing Satellite Images : A Soft Computing Approach	Dr. Ujjwal Maulik	A.I.C.T.E. (7.5)
3.	Development of CAD Tools for Synthesis of VLSI Circuits with Built-in-Self Test Features	Samir Roy	A.I.C.T.E. (2.5)

Department of Electronics and Communication Engineering :

*1	Channel Engineering for Deep Submicron MOSFET	Dr. Abhijit Mallik	A.I.C.T.E. (8.00)
*2	Modern Application of Process Control in Industry	Dr. Achintya Das	A.I.C.T.E. (7.00)
3.	Developmet of Microwave Measurement Laboratory	Head of the Department, Electronics and Communication Engineering	A.I.C.T.E. (8.00)

Department of Mechanical Engineering :

*1	Stepped Threading for Self locking óf Screw & Nut	Dr Santanu Das	A.I.C.T.E. (4.5)
2.	Development of the Mechatronics Laboratory	Head of the Department, Mechinical Engineering	A.I.C.T.E. (3.83)

completed

K) Published research work :

1. M Maitra, U. Das and S Dhar. "Deep-level analysis of GaAs/Si layers grown by different MOCVD technologies" to be published in the proceedings of "National Conference on Materials, Components and Application" held at KIIT, Bhubaneswar, Orissa (February 15-16, 2003).

2. Akshoy Ranjan Paul & Dr. B. Majumdar, "Studies on Flow Deflector Installation at Intel of Sigmoid ducts", presented and published in the proceedings of "2nd International & 29th National Conferences on Fluid Mechanics & Fluid Power" organized by IIT-Roorkee in Dec 13-15, 2002.

3. S. Das and A. B. Chattopadhyay, "Application of the analytic hierarchy process of estimating the state of tool wear", International Journal of Machine tools and Manufacture, 2003, pp. 1-6.

4. P. S. Kulkarni, S. A. Javalekar, V. M. Patel, K. S. Singh and S. Das, " On the development of path planning and motion control of an articulated robotic arm", Proceedings of the 18th convention of Mechanical Engineers and National Seminar on "Emerging Trends in Mechatronics for Automation", 2002, pp. 10-16.

5. M. K. Mondal, N. K. Peyada, S. Patra, S. Pradhan, S. Banerjee and S. Das, "On the anti loosening characteristics of fasteners", Proceedings of the 20th All India Manufacturing Technology Design and Research Conference, 2002, pp. 830-831.

6. G. Bandekar, S. Bhattacharya, A. S, Mani, D. Dass, S. Das and S. D. Kalmavi, " Generation of a part programmer from Auto CAD drawing", Proceedings of the National Conference on Advanced Manufaturing Systems, 2003, pp 439-444.

7. S. Das, invited lectures on "Advancement in the Technology of Grinding", Use of Cryogens as Cutting Fluid: Improvement over Conventional Fluid for Majufacturing of the Future" and "Brief Overview of the Tool Condition Monitoring Systems and Application of the AHP and NN models' in The AICTE-ISTE Short Term Training Programme at Dr. Babasaheb Ambedkar Technological University, LONERE, Mabharastra, in November, 2002.

8. S. Das, invited lectures on "Recent Trends in Grinding Technoogy", "Improving Grinding Performance through effective Application of Grinding Fluid" and "A Brief Overview of the Tool Condition Monitoring Techniques" at an AICTE-ISTE sponsored S.T.T.P. on "Advanced Manufacturing Systems" on December 2002-January 2003 at N.I.T., Hamirpur, Himachal Pradesh.

9. S. Mukherjee & Dr. A. Mazumdar "Prediction of Optimum Water to Air Flow Ratio in Cooling Towers", Proceedings of 54th All India AGM and International

Seminar on "Indian Aviation-Challanges & Perspectives", organised by The Aeronatical Society of India in the Oberoi Grand, Kolkata, (January 21-22, 2003).

10. S. Mukherjee & D. Mitra "The Prospects of Dry Cooling Towers in India", Proceedings of 4th All India People's Technology Congress organised by Forum of Scientists, Engineers & Technologists (FOSET) in the Science City, Kolkata (February 22-23, 2003).

11. S. Bandyopadhyay, U. Maulik and M. K. Pakhira, "An Efficient Clustering Algorithm Guided by Validity Index", Proceedings of the 1st International Conference on Information Technology held at Gopalpur, Orissa, India, in 2002, pp. 81-86.

12. S. Bandyopadhyay, U. Maulik and M. K. Pakhira, "Clustering using Annealing Evolution : Application to Pixel Classification of Satellite Images", Proceedings of National conference on Image Proceessing, Graphics and Computer Vision held at Ahmedabad, India in December, 2002. pp. 343-352.

13. M. K. Pakhira, "A Hybrid Genetic Algorthm Using Probabilistic Selection", accepted for publication in the Journal of Institution of Engineers (India).

14. S. K. Rana & G. Sutradhar, "Cold forging of sintered steel polygonal discs," Proceedings of the 20th All India Manufacturing Technology Design and Research Conference, 2002 also selected by NICMAP a division of CMTI, Bangalore for monthly Journal "Manufacturing Technology Today".

15. Dr. Nemailal Tarafder, Dr. Goutam Sutradhar and Subhrangshu Mishra, "Effect of speed, twist, draft on ring-spun yarn," The Indian Textile Journal, Nov, 2002, pp. 19-28.

16. Bose S. K. & Bhattacharya A. B, "Comparison of ground based observations with Satellite observations of decametric radio emission from Jupiter," XII National Space Science Symposium Proceedings, 2002, p354.

17. Bose S. K. & Bhattacharya A. B. "Solar Plasma activated Decametric Radio emission of non-Io origin from Jupiter's magnetosphere, Indian Journal of Radio & Space Physics, February, 2003, vol 32, p 43.

18. B. K. Mandal, B. Ghosh, C. Neogy, S. K. Deb and A. Nag, "A study of frequency dependent losses in HTSC $YBa_2Cu_2O_7$ (0.1 MH_z - 10 MH_z, 79K-254K). Accepted for publication in Indian Journal of Physics.

19. A Karmakar, A. Moi, M. K. Naskar and S. K. Sarkar, "Genetic Algorithm based performance study of GaAs and $In_{0.53}Ga_{0.47}$ As quantum wells in the microwave and millimeter wae regime", Proceedings of National Conference on Antennas & Propagation (APSYM-2002), CUSAT, Kochi, p. 195, Dec. 09-11, 2002.

20. A. Karmakar, M. K. Naskar, A. K. Biswas and S. K. Sarkar, "System parameter optimization in $In_{0.53}Ga_{0.47}As$ Quantum Wells employing Genetic Algorthm - an aid to device fabrication", Abstract Book, 45th DAE Solid State Physics Symposium, P. 109, Dec. 26-30, 2002.

21. Roy, S., Bandyopadhyay, S., Maulik, U. and Sikdar, B. K. : 'Genetic algorithm based state assignment scheme for synthesis of testable FSMs targeting area and delay,' International Journal of Engineering Intelligent Systems, Vol. 10, No. 1, pp. 45-52, March, 2002, Australia.

22. Roy, S., Maulik, U., Bandyopadhyay, S., Basu, S. and Sikdar, B. K. : 'Fan-in-Factor and Fan-out-Factor (FiF-FoF) oriented BIST design for sequential machines,' IEE Procedings-Computer and Digital Techniques, UK (Accepted).

23. Roy, S., Maulik, U. and Sikdar, B. K. : 'Exploiting Ghost-FSMs as a BIST structure for sequential machines,' Proc. of 16th IEEE/ Int. Conf. On VLSI Design 2003 (VLSID 2003), pp. 115-160, Jan. 2003, New Delhi, India.

24. Roy, S., Bandyopadhyay, S. and Maulik, U. : 'A search scheme to solve the complextriangle elimination (CTE) problem for unweighted adjacency graphs,' in Proc. of 6th IEEE VLSI Design and Test Workshops, pp. 309-316, Aug. 2002, India.

25. Roy, S., Bandyopadhyay, S. and Maulik, U. : "Soft computing approach to solve the weighted complex-triangel elimination (CTE) problem," Proc. of International Conf. on Information Technology, pp. 155-158, Dec. 2002, Bhubaneswar, India.

26. Roy, S., Maulik, U., Bandyopadhyay. S., Basu, S. and Sikdar, B. K. : "Efficient BIST design for sequential machines using FiF-FoF values in machine states," in Proc. of 8th Asia South Pacific Design Automation Conf. 2003 (ASPDAC 2003), pp. 875-878, Japan.

27. S. Bhattacharyya. U. Maulik and S. Bandyopadhyay, "Effecient Object Extraction Using Fuzzy Cardinality Based Thersholding And Hopfield Network" Proc. Indian Conference on Computer Vision, Image Processing and Gaphhics, ICVGIP-2002, pp, 271-275.

28. S. Bhattacharyya, U. Maulik and S. Bandyopadhyay, "Fuzzy Rule Base Design For Evolving Optimum Structural Element For High Speed Target Tracking u s i n gProc. Fuzzy Set Theory and its Mathematical Aspects anc Applications, FSTIMAA- 2002, pp, 99-103.

29. S. Bhattacharyya, U. Maulik and S. Bandyopadhyay, "A Tabu Search Approach to Design Optimum Hopfield Network for Object Extraction using Fuzzy Cardinality Based Theresolding" Proc. Fuzzy Set Theory and its Mathematical Aspects anc Applications, FSTIMAA - 2002, pp, 104-108.

30. S. Bhattacharyya, U. Maulik and S. Bandyopadhyay,"A Fuzzy Approach For Extracting Objects from Noisy Background Using Self Organizing Map" Proc. Conference on Information Technology, CIT - 2002, pp. 285-290.

31. G. Bandyopadhyay "First dissociation constant of Phosphoric Acid in nonaqueous solvents" Zeitschrift Phsikalische Chemie. pp 729, Vol. 216, 2002.

32. G. Bandyopadhyay, "Studies on Thermodynamic dissociation constants of 2, 2'-Bipyridine and 1, 10-Phenanthroline in acetonitrile + water mixtures and Gibbs energy of transfer of hydrogen ion from water to acetonitrile +water mixtures. Zeitschrift Phsikalische Chemie. pp 749, Vol. 216, 2002.

33. G. Bandyopadhyay, "ΔS^0_t-as a structural probe, a critical analysis of the method and determination of structure of aquo-alcoholic mixtures". Zeitschrift Phsikalische Chemie, March 2003.

FORTHCOMING EVENTS

i) A **one day tutorial** on the topic, 'Mechatronic Systems' will be held on November 13, 2003 in the college.

ii) A **conference** on 'Advances and Recent Trends in Manufacturing' will be organised on 14th and 15th November, 2003 by the Mechanical Engineering Department of the college.

iii) A **one year certificate course** on Automobile Engineering will commence from June 16, 2003.

iv) A **short term certificate course** in Basic Electronics will be conducted in July, 2003.