

MultiConf 2011

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ICSSA 2011



ICISD 2011

Proceedings of the 2011 Multi-Conference

**2nd International Conference on Signals, Systems & Automation 2011
(ICSSA 2011)**

and

**International Conference on Intelligent Systems & Data Processing 2011
(ICISD 2011)**

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*Proceedings of the 2011 Multi-Conference
2nd International Conference on Signals, Systems & Automation 2011 (ICSSA 2011)
and
International Conference on Intelligent Systems & Data Processing 2011 (ICISD 2011)*

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About Charutar Vidya Mandal



DR. C. L. PATEL
CHAIRMAN, CVM



CHARUTAR VIDYA MANDAL
ESTD: 1945

One of the greatest son of India Late Sardar Vallabhbhai Patel inspired Shri Bhaikaka and Shri Bhikabhai Saheb for rural resurgence of post-independent India through education, and Charutar Vidya Mandal was born. Charutar Vidya Mandal was established in the year 1945 as a charitable trust with a prime objective of rural development through education to bring about the social awakening, social upliftment and enrichment. The uniqueness of Charutar Vidya Mandal lies in its ability to use quality education as a powerful means of social transformation. It was a stupendous task for the founders to establish a visionary organization; but the large-heartedness and high sense of philanthropy of this region made this possible. Over the subsequent years, Dr. H M Patel consolidated the efforts put in by the founders. Later on, in the 1990s, when Dr. C L Patel took over the reigns of Charutar Vidya Mandal as the Chairman, the country was facing a major economic and ideological change paving the way for globalization and liberalization. The dynamic leadership, missionary zeal and visionary outlook of Dr. C L Patel successfully took up the challenges. Various self-financed educational institutions started being established in the areas of Technology, Science and Engineering, Commerce and Management, offering emerging and innovative courses and programs such as Mechatronics, Automobile Engineering, Bio-technology, Food Processing Technology, E-Commerce, Valuation, etc. Today Charutar Vidya Mandal is empowering budding graduates to live up to the ever-changing environment and equipping them to face the Third Millennium with confidence and competence. Building competitive advantages is the renewed focus of Charutar Vidya Mandal in the 21st century. At present, Charutar Vidya Mandal operates 45 Educational Institutions from schools to colleges, and a sophisticated Research Institute, with over 40,000 students on the rolls.

Message from Chief Patron

I am pleased to know that GCET is going to organize a Multi-conference in the field of Information Technology and Communication Engineering. Today, the technology is developing at a very fast pace. We have observed the progress of last 100 years, but if we compare it with the progress of last 10 years it is much more than last 100 years'. As we all know that our country can only make progress if the scientists and technocrats can utilize their knowledge for exploring newer fields of research and development. We experience new development every day and every moment. Technology is changing and new areas of research are coming up. Now it is high time that everybody from us will have to think and commit for the contribution. Moreover, there is a growing need of more and more industry-institute interaction and linkage. The young faculty members GCET have rightly sensed this need and provided a good platform for the researchers all around the globe to bring forward their thoughts and help society at large. Many congratulations to the Principal, Convener(s) and the organizing committee members for organizing an event of international stature. CVM has always been a front runner to organize such events and this time also we are more than happy to support in organizing *international conference at Vallabh Vidyanagar- the bhoomi of karma and knowledge*.

Once again I convey my blessings and good wishes to all members of GCET family involved dedicatedly for this event.

Dr. C. L. Patel

Chairman

Charutar Vidya Mandal

Vallabh Vidyanagar, Gujarat, India

Message from Patron

It is indeed heartening to know that GCET is organizing the ICSSA 2011 and ICISD 2011 under the umbrella of MultiConf 2011. In this age of highly competitive globalization, the higher education, particularly the technical education, has assumed newer dimensions. When global interdependence and competition are upon us, we must offer quality education and training to our youngsters to keep up and keep pace with the best and the brightest in the world. Keeping this in mind Charutar Vidya Mandal has the tradition of offering the best possible technical education. It is really inspiring to know that over a span of one decade GCET has become one of the premier engineering colleges not only in the state but also in India. But the path towards excellence is never ending. Therefore, our collective efforts should be directed towards all round improvement of GCET in all frontiers of modern technical education. We should also see that the technological advances and research outputs should be beneficial to all human beings and to the society.

I convey my blessings and good wishes to one and all members of GCET family. I also congratulate the members of organizing committee of ICSSA 2011 and ICISD 2011.

Prin. R. P. Patel

Hon. Secretary

Charutar Vidya Mandal

Vallabh Vidyanagar, Gujarat, India

Message from President

The facets of science, technology and engineering are changing very fast. Engineering and Technology are becoming increasingly inter- and multi-disciplinary, and calls for multi-institutional and, in several cases, multi-country participation. Major experimental facilities, even in several areas of basic research, require very large material, human and intellectual resources. Science and technology have become so closely intertwined, and so reinforce each other that, to be effective, any policy needs to view them together. The continuing revolutions in the field of information and communication technology have had profound impact on the manner and speed with which scientific information becomes available, and scientific interactions take place.

Because of all this, our science and technology system has to be infused with new vitality if it is to play a decisive and beneficial role in advancing the wellbeing of all sections of our society.

The Second international conference on Signal systems and automation – ICSSA 2011 and 1st International Conference on Intelligent System and Data Processing – ICISD 2011 will play a humble role in bringing together researchers, younger scientists, and students in an informal environment for discussing the latest advances.

I congratulate Electronics & Communication Engineering for their 2nd International Conference and Information Technology department of GCET for their maiden attempt for holding international conference. All this would not have been possible without the financial support of our Parent body Charutar Vidya Mandal and vision of present Chairman Dr C L Patel in particular for the cause of growth of academics.

I must thank all the contributors, reviewers and experts for their unconditional support in organizing this conference.

Dr Anurag Verma - ME, Ph.D

Principal, G H Patel College of Engineering & Technology

Vallabh Vidyanagar - 388 120

Message from Chief Advisor

I am again delighted to note that Electronics and Communication Engineering department and Information technology department together have arranged Multi International Conference at G H Patel College of Engineering and Technology, Vallabh Vidyanagar

The experience gained during first International Conference last year has been very useful this year; as a result more than 550 papers have been received from all over the world. Approximately only 40% of papers have been accepted for presentation.

All the staff members of both departments have been working hard for the months together for the success of this conference. I sincerely convey my heartily congratulation to all members, teaching as well as non-teaching, who have put the name of GCET on global Map.

I hope that all local as well as foreign delegates will get useful deliberations during the conference. I also wish their-stay at Vallabh Vidyanagar is joyful and useful

Prof. J C Panchal

Advisor,

Institute of Computer & Communication Technology (Women),

New Vallabh Vidyanagar, Gujarat, India

About G H Patel College of Engineering & Technology

The institute is managed by one of the highly reputed and largest educational trust Charutar Vidya Mandal. From the very inception (in the year 1996) GCET has striven to develop itself into an 'Institution of Excellence' in education and research in consonance with the spirit of modern Gujarat. In meeting this challenge for excellence, GCET has shaped its institution to the contemporary as well as future demands of need oriented education. Today, GCET has total strength of 1800 students studying for Chemical, Mechanical, Information Technology, Electronics and Communication, Computer, Electrical Engineering and Mechatronics under tutelage of 126 dedicated and competent faculties. GCET is one of the premier Self-Financed Institutes in the state. GCET is the pioneer in offering Information Technology and Mechatronics Engineering programmes. It is equipped with state of the art computer laboratories with more than 450 nos. of P4 computers with 10Mbps shared internet Wi-Fi connectivity. More than 200 international journals are available in fully automated digital library. 100% placement of eligible students are secured regularly in various Professional and Multinational companies like Infosys, Wipro, TCS, L&T, Essar, MBT, Reliance, PCS, Accenture, Siemens, DLF, Voltas, Tata Chemicals etc. GCET was ranked 99 among top 100 engineering colleges across the country by Outlook '06 & '09. In the year 2010 this rank is improved to 85.

Our Vision

To produce engineering graduates who are globally competitive, live by a set of core values, are able to accept any professional challenge thrown at them, and remain responsive to the needs of India and the humanity.

Our Mission

To foster a stimulating learning environment, develop excellence amongst students, faculty and staff in every activity GCET carries out, and thereby aim to become one of the best premier technical institutes of the country.

Our Quality Policy

We, at GCET, will continuously strive to become and remain leaders amongst technical education institutions in India through constant improvement in teaching learning process, continuous interaction with industry through consultancy, combined development project and providing project and providing an intellectual environment conducive to lifelong learning.

About Department of Electronics & Communication Engineering

The Department of Electronics & Communications started in 1997 is one of the largest and upcoming departments of G H Patel College of Engineering & Technology. This Department has given its first meritorious batch of EC graduates in July 2001; majority students of this batch are well placed through campus or have gone for higher studies. The Department has excellent laboratory facilities both for teaching and research. In 2007 the department started Post graduate program in Communication Engineering. The first batch of PG graduated in July 2009. The department faculty members have published many international Journal and conference papers. The Department organizes workshops, seminars in various specialties, and runs summer/winter schools for the benefit of engineering college teachers and professional engineers.

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Message from Convener

With rapidly growing hardware performance and the advent of new devices, new boundaries are continually being established in the field of signals, systems and automation. The second International Conference on Signals, Systems and Automation aims to bring researchers from various fields of signals, systems and automation together to share their new thoughts, findings and applications. This conference has attracted both established academicians and research students from around the world. The research papers show that exciting work is being undertaken in the numerous topics of signals, systems and automation. In addition, interaction between delegates attending the conference has led to new ideas and exciting research directions.

The response from the academic community has been enthusiastic, with almost 270 submissions received. The papers were submitted from eleven different countries including Iran, Malaysia, Russia, Nigeria and Poland. While we have received papers from authors from different states of India which includes Delhi, Maharashtra, Andhra Pradesh, Assam, West Bengal, Punjab, Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Haryana, Tamilnadu, Orissa, Bihar and Rajasthan. Each paper has been carefully reviewed by at least one reviewer to ensure research quality. The acceptance rate of the conference is 42% only. More than 100 papers are published and presented in the conference.

The papers are organized into seven themes, which range from wireless mobile communication to advanced control systems. These have contributed towards new knowledge and understanding, and have provided software tools and applications that will be of important value to researchers, students and software developers alike. I am grateful to all the contributors who have presented their valuable work to the research community.

The success of the conference is a result of the efforts of the contributors and presenters who have shared with us the latest developments in their respective fields. Such an event is not possible without the hard work of the reviewers, to whom I am deeply indebted for their time and professional opinions on the submissions. I understand many reviewers have sacrificed their spare time in order to meet the tight time schedule. The plenary talks by Dr. Alexander

Kluge (CERN Lab, Switzerland), Dr. K. Galkowski (Poland), Prof. S. C. Sahasrabudhe (DA-IICT, Gandhinagar), Prof. P. S. V. Nataraj (SysCon, IITB, Mumbai), Prof. Kavi Arya (Computer Science and Engineering Department, IITB, Mumbai) and Prof. Asim Banerjee (DA-IICT, Gandhinagar) has made this conference an ideal platform for knowledge sharing.

I am very much thankful to Charutar Vidya Mandal for financial and full hearted support. I am grateful for the technical support by IEEE student branch of GCET, SLS Inc. I extend my thanks to Universal Publishers for making an abridged edition available online at www.Universal-Publishers.com. Finally, my special thanks go to the conference organizing team who have coordinated activities and liaised with the contributors, reviewers and many of the other parties concerned. Their dedicated support ensures that the conference is of high quality and makes the conference a thoroughly enjoyable gathering.

Dr. Himanshu Soni
Convener, ICSSA 2011
Vallabh Vidyanagar, Gujarat, India

About IT Department

Information Technology deals with the gamut of Electronic Technology and software which can be used to transmit, receive, store and process information in digital form. Sustained developments in the area have made it possible to process information at speeds which were thought impossible few years ago.

GCET was the pioneer in India to appreciate the importance of Information Technology and established a four year bachelor degree programme in 1996-97 with an intake of 60 students. Many distinguished alumni of the department are either holding respectable position in industries like Infosys, Wipro, IBM, Intel, Capgemini, Microsoft, etc or have opted for higher studies across the globe. Students of this department with the help of faculty members have developed user friendly software for Online Feedback system and Library. These softwares have considerably enhanced the Information Access Facility.

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Department of Information Technology

ICISD 2011 Convener's Message

The present century is referred to as the Knowledge and Information age. Modern Science with its wings in different direction can find solutions for many problems of mankind which were looking *impossible* until now. This is where the need of research arises.

The idea behind the organization of International Conference on Intelligent Systems and Data Processing – ICISD 2011; is to create the atmosphere of research in students and young faculty members of the region. Research oriented attitude – This is the Demand of time, but the young people might be lacking motivation and guidance in proper direction. Eminent personalities of the world come to our place; motivate us and share their experience of research and undoubtedly struggle faced in their time along with the present era of the direction where world is going. It was looking like a dream! But with the support and trust of our visionary chairman Dr C L Patel and Principal Dr Anurag Verma, it could be made *possible*.

I thank the technical program committee members from Cambridge University (UK), University of Curtin (Australia), University of Victoria (New Zealand), IIT Bombay, IISC Bangalore as well as various NIT(s) and reputed university of the country for their guidance as well as reviewing the technical papers.

Behind the success of the whole work, I can not forget the unconditional support of the faculty members as well as non teaching staff members of the department. Lastly, let's pray to almighty for strengthening us to achieve the goal and right path.

Dr Apurva M Shah
Convener, ICISD 2011 &
Head, Department of Information Technology,
G H Patel College of Engineering and Technology,
Vallabh Vidyanagar

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Wireless & Mobile Communication

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