

RES NOVAE

Issue - 5

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<http://www.chitkara.edu.in/rese-novae-newsletter/>

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Editorial Team:

- ❖ Dr. Sachin Ahuja
- ❖ Mr. Ravi Gupta
- ❖ Ms. Neha Tuli

Upcoming Event

WECON 2016

5th Edition of International Conference on
Wireless Networks and Embedded Systems

Date: 15-16 October, 2016

Venue: Chitkara University, Rajpura (Punjab)

'HYDROGEN' AS A FUTURE FUEL

Dr. Amandeep Singh Oberoi

Chitkara University

Continuous rise in emissions levels of greenhouse gases; popularly known as GHGs, from various sources has led to global warming and climatic change from past many decades. Particularly emissions from burning fossil fuels are considered to be major contributor in increasing concentration of GHGs in atmosphere leading to global warming. On the other hand, increased dependency on fossil fuels has pushed the reservoirs of fossil fuel at the verge of depletion. So, researchers have felt a pressing need to shift their focus from conventional fossil fuels to renewable energy resources to address these energy related challenges facing mankind. What is required therefore is to explore some alternative fuels that are environmental friendly or low emission fuels, have comparable energy content, and could be stored on-board of vehicles.

John O' Bockris, a renowned scientist, proposed in 1975 the production of hydrogen from renewable sources and storing it for reuse in fuel cell. This noble idea offered a solution to the problem of

continued...



storing intermittent renewable energy and storing it on-board vehicles as a 'zero-emission' transport fuel. Also hydrogen obtained from renewable can be utilized in electricity supply systems as a long-term energy system capable of meeting continuous energy supply demand. Due to these reasons major economies of the world have formulated their goals to adopt 'Hydrogen as a Future Fuel' which is considered to be an alternative to the depleting fossil fuels.

Why Hydrogen?

Hydrogen is available in abundance in nature in form of a chemical compound e.g. in water and other organic matter. Besides, it is light in weight and has got immense energy content (Gross Calorific value is around 143 MJ/kg) that offers zero-emission solution to the automobile industry.

How to produce hydrogen?

1. Synthesis of Natural Gas: by mixing natural gas with steam and CO_2 .
2. Electrolysis: by using electric current to split water into H_2 and O_2 .
3. Liquid Reforming: by refining hydrogen enriched alcohols like ethanol.
4. Fermentation: by bacterial decomposition of an organic matter.

How to store hydrogen?

1. GAS: Hydrogen storage as a compressed gas has shown an acceptable figures of gravimetric and volumetric energy densities, but energy penalty and practicality in compressing to 350 or 700 bar and safety issues in handling the flammable hydrogen gas are some of the challenges.
2. LIQUID: Liquid hydrogen storage requires very low temperatures (20.28 K), and has high energy penalty and technical complexity, and hence is very high cost
3. CHEMICAL COMPOUND: Hydrogen could be stored electrochemically in various metals and porous mediums either through physical adsorption or chemical adsorption which is a safer option than storing gas or liquid.

Porous Carbon-based Materials for Electrochemical Hydrogen Storage

Researchers are exploring various materials with acceptable electrochemical hydrogen storage capacity in terms of gravimetric energy density (mass of hydrogen stored per mass of the storage material) and volumetric

energy density (volume of hydrogen stored per volume of the storage material). Out of many available materials carbon have emerged as a promising candidate for the goal because of its porous nature, lighter weight as compared to other metals, high internal pore surface area, and diverse pore size distribution ranging from macro to ultra-micro level.

Recently I have reported in my PhD thesis some acceptable figures of storage of hydrogen electrochemically in porous activated carbons made from Victorian Brown Coal and other precursors of carbon with potential application in proton electrolyte membrane (PEM) unitized regenerative fuel cells (PEMFC).

Current Status of Global Hydrogen Adoption

Some of the leading automobile manufacturing companies have already launched their hydrogen fuel cell powered cars e.g. Honda FCX Clarity, Toyota Mirai etc. But, these cars are still relying on a compressed hydrogen gas because electrochemical hydrogen storage with acceptable figures of gravimetric and volumetric energy densities is currently an area that is being researched upon. However, some initial published results of electrochemical hydrogen storage in carbon-based materials are promising and not far from the desired figures. So now, the concept of energy future in context to carbon-based materials like coal has changed to below.

A future vision for energy storage?

coal for storing hydrogen energy



rather than



energy from burning coal

Dr. Amandeep S. Oberoi is PhD in Mechanical Engg. from RMIT University, Melbourne, Australia. He is currently serving Chitkara University as Associate Professor, CURIN. His areas of interest are Hydrogen Fuel Cell Technologies, Energy storage, Thermal heat Sinks and Thermal Heat Engines.



PROVISIONAL PATENTS FILED

*Discovery consists of seeing what everybody has seen and thinking
what nobody has thought.*

Albert von Szent-Gyorgy

- ❖ **Energy Efficient and Intelligent Cluster Type Heterogeneous System for Grid Based Wireless Sensor Networks**
Dt. 24/08/2016 No. 201611028872
Inventors:
Mr. Rajvir Singh, Mr. Rama Krishna Challa
- ❖ **Herbal Hypertensive and Blood Thinning Agent and Method Thereof**
Dt. 12/08/2016 No. 201611027647
Inventors:
Dr. Thakur Gurjeet Singh, Ms. Sonia Dhima
- ❖ **Digital Device for Measuring Thyroid Levels in Blood and Establishing Co-Relation with Thyroid Gland Malfunction**
Dt. 20/07/2016 No. 201611024911
Inventors:
Gurpreet Kaur Sagoo, Dr. Varsha Singh, Dr. Saluja Nitin
- ❖ **Athletic Shoe with Pressure and Bend Detection Means**
Dt. 29/07/2016 No. 201611025976
Inventors:
Mr. Deepak Saluja, Shiva Gaur
- ❖ **Mobile Phone with a Mechanism to Lock Power Button for Preventing the Unauthorized Use**
Dt. 01/07/2016 No. 201611022659
Inventors:
Dr. Ramkumar Ketti Ramachandran, Dr. Harsh Sohal, Dr. Raman Singh
- ❖ **Topical Analgesic Composition**
Dt. 31/05/2016 No. 201611018772
Inventors:
Dr. Thakur Gurjeet Singh, Dr. Ashish Kumar Rehni, Ms. Sonia Dhiman
- ❖ **Magnetic Liquid Based Self-Charging Battery and Method of Self-Charging**
Dt. 31/05/2016 No. 201611018773
Inventors:
Mr. Deepak Saluja, Ritika Jindal, Shubham
- ❖ **VPN based system and method to detect and monitor Passenger overloading in public transport**
Dt. 31/05/2016 No. 201611018733
Inventors:
Dr. Surya Narayan Panda, Tarsem Lal Singhal, Abhishek Kansal, Prince Dogra, Piyush Sohal, Pratham Bathla, Anchal Kathuria

CONSULTANCY PROJECTS

Innovation— any new idea—by definition will not be accepted at first. It takes repeated attempts, endless demonstrations, monotonous rehearsals before innovation can be accepted and internalized by an organization. This requires courageous patience.

Warren Bennis

- ❖ **Vertical Milling Section Based Fixture Development**
Organization: Vision Laryngoscope, Mohali
Project Head: Dr. Anoop Kumar Singh
May- June, 2016
Chitkara School of Mechanical Engineering
- ❖ **Vertical Milling Section Based Prototype Development**
Organization: Vision Laryngoscope, Mohali
Project Head: Dr. Anoop Kumar Singh
May 2016 - May 2017
Chitkara School of Mechanical Engineering
- ❖ **EY Excel-Team Training of Trainers for Launch Courses**
Organization: Mr. R.D. Thulasi Raja, LAICO, AECS A
WHO Collaborating Centre for PBL, Madurai
Project Head: Dr. Preethi Pradan
Mar 2016 – Aug., 2017
Chitkara School of Health Sciences
- ❖ **Standardization of Nano Antibiotic Formation**
Organization: Dr. Giridhar Gopal, GG Biotech Corporation, Barielly
Project Head: Dr. Sandeep Arora
Aug., 2016- Feb., 2017
Chitkara College of Pharmacy

CONFERENCES/WORKSHOPS/SEMINARS/EXPERT LECTURE

*Discoveries are often made by not following instructions, by going off the main road,
by trying the untried.*

Frank Tyge

Summer School - 2016

Summer School-2016 of Faculty & Staff of Chitkara University, Punjab had a magnificent opening and incessant participation, the main aspire of the Summer School was to fetch all research talents together to create a pool of research domains. The other imperative inspiration was to create a multidisciplinary research environment amongst the faculty members of Chitkara University. The duration of the Summer Schools was from 20th June 2016 to 05 July 2016. The following Summer Schools were organized by various subject experts in their respective domains.

S. No.	Name of the Workshop	Coordinator
1.	Designing and analyzing mid-term Assessments to address Course Objectives and Improve Class Performance	Dr. Archana Mantri
2.	Image Segmentation Based Techniques	Dr. Sheifali Gupta
3.	Data Mining using Rapid Miner	Dr. Sachin Ahuja
4.	Machine Learning using Weka	Mr. Bhisham Sharma
5.	Intellectual Property Rights	Dr. Sachin Ahuja
6.	Application of Global Positioning Systems	Dr. Jaiteg Singh
7.	Speech and Natural Language Processing	Dr. Amitoj Singh, Dr. Sachin Ahuja
8.	Voyaging with Routing and Protocols in Computer Networks	Dr. S.N. Panda
9.	Organizing Research: From Concept to Dissemination	Dr. Jaiteg Singh
10.	IUCEE - IGIP pre-certification Workshop for Engineering Faculty	Dr. Archana Mantri
11.	Cyber Security with Machine Learning concepts and Field Programmable Gate Array Implementations (CML-FPGA)	Dr. K.R. Ramkumar
12.	Designing and Analyzing Feedback From Students, Parents, Industry and Alumni	Dr. Sandhir Sharma

More than 250 participants inclusive the good number of external participants from various other Institutions who attended the workshops with full enthusiasm. The summer school opened a new door towards the new research domains and participants were given hands-on experience to practice more on real time problems. Moreover, the resource persons from various reputed Institutions were invited to share their affluent experience & knowledge with the participants.

The participants have given excellent feedback about the workshops and solicited for the similar workshops in near future.

The valedictory function was graced by Dr Madhu Chitkara, Vice-Chancellor, Chitkara University where all the resource persons and subject experts were honored for conducting such an astounding summer school 2016.





❖ **Expert Lecture on
*Procedure of Filing and Claim a Patent***
25th May, 2016

Dr. S.N. Panda, Director Research (CURIN) delivered an extension lecture on "Procedure of Filing and Claim a



Patent" in National level refresher course for college lecturers organised by UGC HRDC centre of Punjabi University, Patiala on 25th May, 2016.

❖ **Expert Lecture on
*Implementation of Research Projects on Cloud Environment***
8th July, 2016

Dr. S.N. Panda, Director Research (CURIN) delivered an extension lecture on "Implementation of Research Projects on Cloud Environment" in Faculty Development Programme



in Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib on 8th July, 2016, which is sponsored by Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab.

❖ **Seminar on
*"Funding Opportunities for Doctoral Research"***
8th July, 2016

Dr. Nitin Saluja, Assistant Director (CURIN) organized an open seminar on "Funding Opportunities for Doctor Research" for all the supervisors and PhD Scholars of

Chitkara University, Punjab on 8th July, 2016. Dr. Saluja explained various schemes available for funding for Doctoral Research. The schemes discussed were PM Fellowship scheme; DEITY schemes for Higher Studies; DST INSPIRE; NET/SLET Funding by CSIR/ICMR/UGC/AICTE; and IEEE societies for funding higher studies.

❖ **Workshop on
*Data Mining Paradigms in Bio-Informatics***
27th July, 2016

Chitkara University Research and Innovation Network organized workshop on "Data Mining Paradigm in bio-informatics" on 27th July 2016. Dr. Sumeet Dua delivered his expert talk on Machine Learning and Data Mining



introducing supervised and un-supervised learning, image mining, time series indexing, content retrieval and heterogeneous data fusion. He detailed the topics with real time examples for data mining in daily life usage and also explained modern applications for data mining. The workshop is co-ordinated by Dr. Nitin Saluja and 28 participants from different Universities attended the workshop.

❖ **Conference on
*Reducing Dependence on China for API Drugs***
28th July, 2016

Students from B Pharm, M Pharm and Pharm D from Chitkara College of Pharmacy attended one-day "Conference on Reducing Dependence on China for API" organized by ASSOCHAM INDIA at Baddi, a hub for Pharmaceutical Industries. Dr Sandeep Arora, Director, Chitkara College of Pharmacy, Chitkara University delivered a session on "Increasing API research productivity in Pharma Industries". The Conference was chaired by Minister for Industries, Baddi and Co-chaired by Sh. Marwaha, Drug Controller, HP. Various senior speakers from industry and Academics conducted technical sessions including Dr. T.R. Bhardwaj, Former Prof, UIPS, Chd, Dr Munjal, Ind Swift Labs, Dr KKBhutani, Acting Director, NIPER, Mohali, Dr C.S. Gautam, GMCH, Chd, Sh. Marwaha, Drug Controller, HP and other dignitaries.

❖ **Workshop on**

Deep Dive into Rapid Prototyping

5th August, 2016

Prototyping Division @CURIN in association with CEED has organized a One-Day Workshop on Rapid Prototyping by the leaders in space- Maker's Asylum. The workshop



consisted of two sessions - Introduction and Discussion session for the wider audience and Hands-on- session for the selected inventors. The response from the audience was over whelming in the first session where the speakers focused on development of an idea and converting it into a commercialized product. In the second session, the selected inventors were made to get involved in a group activity leading to problem identification and finding the innovative solution.

❖ **Workshop on**

Frame Work of PhD Programme and Conduct of Supervision

17th August, 2016

Dr. Pankaj Kumar, (Professor & Associate Dean, PhD Programme, CURIN) organized a workshop on "Frame Work of PhD Programme and Conduct of Supervision" at Chitkara University, Punjab on 17th Aug., 2016. The attendees for this



workshop were the PhD supervisors of all the school/departments of Science and Engineering from both Punjab and Himachal campuses. This workshop was focused on motive of PhD program, its frame work, university policies

for PhD program and recent UGC guidelines for the award of the PhD degree. Dr. Kumar had a detailed one to one discussion and hands-on-session on "preparation of research proposal and its important components".

❖ **Workshop on**

Cyber Technology Communication for Women Safety

13th August, 2016

Dr. S.N. Panda, Director Research (CURIN) and his DST project team conducted a workshop on "Cyber Technology Communication for Women Safety" in S. A. Jain PG College, Ambala City on 13th Aug., 2016, we have, under the Funded Project to our University from Ministry of Science & Technology, NCSTC, Govt. of



India and in collaboration with Punjab State Council for Science & Technology, Govt. of Punjab.

❖ **Expert Lecture on**

Mobile Technology Communication for Women Safety

19th August, 2016

Dr. S. N. Panda, Director Research (CURIN) delivered an extension lecture on "Mobile Technology Communication for Women Safety" in S. D. College, Near Banur on 19/08/2016.

❖ **Workshop on**

Cyber Technology Communication for Women Safety

20th August, 2016

Dr.S.N.Panda and his DST project team conducted a workshop on "Cyber Technology Communication for



Women Safety" in Janta College, Yamuna Nagar on 20/8/2016 we have, under the Funded Project to our University from Ministry of Science & Technology, NCSTC,

Govt. of India and in collaboration with Punjab State Council for Science & Technology, Govt. of Punjab.

WORKSHOPS/CONFERENCE/SEMINARS ATTENDED

Remember the two benefits of failure. First, if you do fail, you learn what doesn't work; and second, the failure gives you the opportunity to try a new approach.

Roger Von Oech

- ❖ Mr. Sahil Gupta, Research Associate, Doctoral Research Centre attended a National FDP on "Multivariate and



Advanced Data Analysis for Management and Social Science Research" at ABVIITM, Gwalior from 25 July-30 July, 2016.

- ❖ Dr. Amit Mittal, Dean, Doctoral Research Centre, International Speaker at a workshop on "Course Curriculum of Business



Schools in BIMSTEC Region", hosted by Daffodils International University, Dhaka, Bangladesh, June 3-4, 2016.

- ❖ Mr. Rahul Dhiman, Assistant Professor, Doctoral Research Centre attended Short Term Course on "Research Tools, Techniques and Software Applications for Quality Research" during June 13-17, 2016 at Indian Institute of Technology, Roorkee.

RESEARCH PROPOSALS SUBMITTED/SHORTLISTED/GRANTED/APPROVED

Genius is one percent inspiration, and ninety-nine percent perspiration.

Thomas Edison

- Multilingual Automatic Speech Recognition using Deep Neural Networks and GPU based High Performance Computing**
Submitted to: Indo-Russian DST-RFBR Joint Call
Project Investigators: Dr. Amitoj Singh, Dr. Archana Mantri, Dr. S N Panda, Dr. Sachin Ahuja
- Design, Integration and Evaluation of Cochlear Implant ASIC by Investigation and Implementation of Best Ultra Low Power Technique**
Submitted to: Science and Engineering Research Board, Early Career Research Award scheme, Government of India
Project Investigators: Dr. Harsh Sohal, Ms. Anjali Sharma
- Data Mining for the Behavioural Analysis of Mobile Adhoc Networks to Resolve Reliability Issues of Data Transfer**
Submitted to: Indo-Russian DST-RFBR Joint Call
Project Investigators: Dr. K.R. Ramkumar, Dr. Harsh Sohal, Dr. Raman Singh
- e-Agriculture**
Submitted to: Science and Engineering Research Board, Government of India under the scheme of Extra Mural Research Funding (Individual Centric), Delhi.
Project Investigator: Dr. Sachin Ahuja, Dr. Harsh Sohal, Dr. K. R. Ramkumar

EXPERT TALKS DELIVERED

Innovation is the process of turning ideas into manufacturable and marketable form.

Watts Humprey

❖ Expert Talk on

International Trade as Catalyst of Indian Economy

6th May, 2016

Mr. Rahul Dhiman, Assistant Professor, Doctoral Research Centre, delivered an Expert Talk on "International Trade as



Catalyst of Indian Economy" at KC Institute of Management-Himachal Campus on May 06, 2016.

❖ Expert Lecture on

Data Analysis and use of SPSS

28th June, 2016

Dr. Deepika Jhamb & Mr. Sahil Gupta delivered an expert lecture in workshop "Organizing Research: From Concept to Dissemination" of Summer School 2016 on the topic "Data Analysis and Use of SPSS" on 28th June 2016.

❖ Expert Lecture on

Literature Review

29th June, 2016

Dr. Amit Mittal, Dean, Doctoral Research Centre, gave expert Lecture on 'Literature Review' in Summer School Workshop titled "Organizing Research: From Concept to Dissemination" Chitkara University, Punjab on 29th June, 2016.

❖ Talk by

Ms. Manisha Mohan

22nd July, 2016

CURIN launched 'Innovation led commercialization' talk series in which we bring leading innovators from around the world to the campus to share their stories how their innovation and creativity changed the way people will live on this earth. The first talk in this series is on "Innovation to Commercialization" by Ms. Manisha

Mohan, President Award Winner for her innovative project "SHE-Society Harnessing Equipment" & Research Assistant at



Massachusetts Institute of Technology (MIT). Over 100 participants including faculty and students attended the talk and were benefitted by the experience shared by Ms. Manisha Mohan.

❖ Expert Talk by

Dr. Sadanand from ARM

28th July, 2016

Dr. Sadanand Gulwadi, Global Manager for ARM University Program visited Chitkara University, Punjab from 27th to 29th July, 2016. During his visit, he



interacted with undergraduate and postgraduate students of Electronics & Communication and Computer Science & Engineering departments. He insisted upon the need for Engineers of today to expand their thinking beyond textbooks and assume the challenges of life for the same.

In a highly interactive session with students, he reminded students about the grand challenges faced by today's engineering community in terms of shortage

of water and energy while creation of surplus of carbon footprint. He also motivated students to make them believe that the solution too many of these challenges are expected from their side. Students thoroughly enjoyed the session and got immensely benefitted from Dr. Sadanand's presence .

❖ Expert Talk by

Mr. Ankit Bhateja from Xovian

12th August, 2016

The second talk in "Innovation led Commercialization" series delivered by Mr. Ankit Bhateja is Founder of Xovian, a space start-up founded in 2011. Ankit shared his experience about his journey of the startup - Xovian and Do's and Don't's in the initial stage of a hardware/innovation startup and how to bootstrap without raising

funds. Having talked about his start up, he discussed about Product Design, CANSAT- Module based



satellite, HAB - High Altitude ballooning, NANOSAT- Nano Satellites.

PUBLICATIONS

The innovation point is the pivotal moment when talented and motivated people seek the opportunity to act on their ideas and dreams.

W. Arthur Porter

- ❖ Jhamb D., "Materialism and Society: A Bibliographic Analysis" International Conference on 'Managing Responsible Research in the Human Sciences and Information Management' Panjab University, Chandigarh on 12th - 13th August, 2016.
- ❖ Garg, D., Sohal, H., & Ahuja, S., SSTL IO standard based power efficient data processing device design on FPGA. International Conference on Circuit, Power and Computing Technologies (ICCPCT) IEEE, 2016, pp. 1-5.
- ❖ Kumar P., Sharma V., Jaggi C., Jayoti D., Raina K.K. and Malik P., "Impact of dye on switching responses of polymer dispersed ferroelectric liquid crystal" 26th International liquid crystal conference (ILCC-26), Kent State University, U.S.A., 31st July-5th August, 2016, pp-52.
- ❖ Sood M., Sharma M.G., Ahuja S., "Community Awareness of Malaria in Rural Punjab: A Cross-Sectional Study" Global Journal of Advanced Research (GJAR), Vol. 3, Issue 7, July, 2016.
- ❖ Gupta S., Kumar N., "Offline Handwritten Gurmukhi Character Recognition: A Review" International Journal of Software Engineering and Its Applications, Vol. 10, No. 5(2016), pp. 77-86, DOI: 10.14257/ijbsbt.2016.8.3.07 (Scopus Indexed Journal).
- ❖ Gupta S., Garg M., "Retinal Blood Vessel Segmentation Algorithms: A Comparative Survey" International Journal of Bio-Science and Bio-Technology, Vol. 8, No. 3, (2016), pp. 63-76, DOI: 10.14257/ijbsbt.2016.8.3.07 (Scopus Indexed Journal).
- ❖ Dhiman R., Kumar R., Gupta S., Kumar M., "Recent Trends in the Bilateral Trade Engagement of India and Canada" published in International Journal of Applied Business and Economic Research, 14 (3): pp. 1645-1670, 2016 (ISSN: 0972-7302) (Scopus Indexed and ABDC Journal Quality).
- ❖ Gupta S., Singh S., "Digital Image Processing Techniques for Early Detection and Classification of Different Diseased Plants" International Journal of BioScience and Bio-Technology, Vol. 8, No. 4 (2016), pp. 61-66, ISSN: 2233-7849 (Scopus Indexed Journal) <http://dx.doi.org/10.14257/ijbsbt.2016.8.4.07>.
- ❖ Dhiman R., "Revealed Comparative Advantage of Indian Textile Industry in Global Markets" in 1st International Conference on Technology Management, NIT Hamirpur (H.P), July 14-15, 2016.
- ❖ Jothi V., Raman V., Sharma R., Camarillo Ignacio, Sundararajan R., "Electroporation-based Enhanced Anti-Cancer Effect of Veliparib on Triple Negative Breast Cancer Cells" ESA 2016 conference held at Purdue University from 13th to 16th June, 2016.
- ❖ Sharma V., Jaggi C., Raina K.K. and Kumar P., "Optical responses of dichroic polymer dispersed ferroelectric liquid crystal films" 4th National conference on nanoscience and instrumentation technology (NCNIT-4), NIT, Kurukshetra, Haryana (India), June 4-5, 2016, pp-15.
- ❖ Jaggi C., Sharma V., Raina K.K. and Kumar P., "Homeotropic Transition along with Control of Liquid Crystal via Alumina Nano Particles" 4th National conference on nanoscience and instrumentation technology (NCNIT-4), NIT, Kurukshetra, Haryana (India), June 4-5, 2016, pp-32.
- ❖ Singh B., Mahajan R., Panda S.N., Samra G.S., "Detecting DDOS attacks in Cloud – A Novel Approach" published in International Journal of Computer Science and Information Security (IJCSIS) ISSN 1947-5500 Vol. 14, No. 5, pp. 292-298, May, 2016.

- ❖ Ahuja S., Kaur H., "Time Series Analysis and Prediction of Electricity Consumption of Health Care Institution using ARIMA Mode" accepted in SocProS-2016 Thapar University,

Patiala publications of the proceedings published by AISC series of Springer (<http://www.springer.com/series/11156>).

ACHIEVEMENTS

It isn't all over; everything has not been invented; the human adventure is just beginning.

Gene Roddenberry

BEST PAPER AWARD

Jaggi C., Sharma V, Raina K.K., and Kumar P., "Homeotropic Transition along with Control of Liquid Crystal via Alumina

Nano Particles" 4th National conference on nanoscience and instrumentation technology (NCNIT-4), NIT,

Chitkara School of Computer Sciences have bagged top 2 positions in SAP Mile pilot projects. Out of total 100 projects from 25 Colleges/Universities from India, two #projects from our University were selected to be showcased in prestigious #SAP MILE DKOM event at KTPO, Whitefield in Bangalore. The team which bagged 1st position showcased their project on "Universal Electronic 'I' and 'Walking Guide' for Differently-abled under Dr. Amitoj Singh & Ms. Vidhyotma Gandhi. The team members were Stuti, Stuti Kashyap, Sudhanshu Rai & Sushant Khaneja of 4th semester BE-CSE. Team at 2nd position demonstrated their work on "A Security System for Smart Homes" under the guidance of Dr. Jaiteg Singh and students who calibrated their skill were Jatin Nijhawan, Kashish Jindal, Lakshay Chhabra & Lakshay Bareja of 6th semester BE-CSE. The overall event coordination was done by Dr. Sachin Ahuja.

