



Dayalbagh Educational Institute (Deemed University)

DEI | news

September 2021 No. 47

44th National Systems Conference (NSC 2021) Held at DEI

The Dayalbagh Educational Institute, in association with Systems Society of India (SSI), organized the 44th National Systems Conference (NSC-2021) on Systems for Sustainable Healthcare Habitats from May 22 to May 23, 2021, at Dayalbagh Educational Institute, Agra. The Conference was held online in virtual mode with approximately 3000 participants in each session across the globe connected through e-cascade.

There were thirty oral presentations which were divided into six categories, namely, 'Consciousness and Biological Systems', 'Education Systems', 'Environment Systems', 'Healthcare Systems', 'Information and Communication Systems' and 'Mathematical Systems' with five papers in each category. For each paper, an 8–10-min pre-recorded video was presented followed by a live audio interaction. Similarly, the Poster Session with ten selected posters was scheduled for 30 minutes on Day-2 in which a pre-recorded video of each poster of 3 minutes or less was presented followed by an audio interaction. The Annual General Meeting (AGM) of the Systems Society of India was also held on Day - 1.

A brief Inaugural Session was scheduled in the evening on Day-1. The session began with the University Prayer followed by a brief introduction about the SSI by its President. A short video by Prof Erik Goodman from Michigan State University (MSU) was played in which he mentioned about his long association with Prof Herman E. Koenig who pioneered Physical System Theory. Prof Koenig had also taught Most Revered Prof. P S Satsangi Sahab during His Master's programme at MSU. Prof Goodman saluted Most Revered Prof. P S Satsangi Sahab for His vision in founding and nurturing the SSI. The Convener of NSC-21 provided details about the conference and presented a short film introducing DEI. This was followed by two plenary talks on 'Complex System of Systems Engineering Paradigm for Smart Future Systems' by Prof. Mo Jamshidi, University of Texas at San Antonio, USA and 'Systems Framework for Personalized Infectious Disease Management Using Nano-enabled Biosensors' by Prof. Evangelyn C. Alocilja, Michigan State University, USA.

Both the plenary talks were successful in generating good interaction with the audience. This was followed by six invited talks by young researchers across the globe under the theme 'What GenNext Thinks'. The presenters were, Dr. N. Apurva Ratan Murty from MIT, USA, who talked about The GenNext of Science and what it will take to get there, Dr. Aarat Kalra of Princeton University, USA, who presented Habits and Habitats: Comparing Dayalbagh and Princeton, contrasting the East and the West in dealing with different scenarios, Mr. Karan Narain from TCS Research and DEI, India, who presented some interesting recent research endeavours including phonons, graphene, graph theoretic modelling and nano brain, Dr. Tanmay Nath from Johns Hopkins University, USA, who talked about High-Dimensional



Mediation Using Deep Learning: Understanding the Stimulus-pain Relationship in Humans, Dr. Surat Parvatam from Atal Incubation Centre-CCMB, India who made a presentation on 'Shift Towards Human-relevant and Predictive Paradigm for research and Drug Discovery' and Mr. Anubhav Nanavati, a PhD student in The University of California at Irvine, USA, who discussed Algebraic Geometry, K-Theory, and Future Outlook.

On Day-2, the remaining oral presentations took place followed by the poster presentations and two plenary talks which were on 'Imitation Learning from Human Demonstration' by Prof. Laxmidhar Behera, Indian Institute of Technology (IIT), Kanpur, India and 'Waking the Frog: Building a Renewed Climate Capitalism' by Dr Tom Rand, ArcTern Ventures, Canada.

A Panel Discussion was also organized on the theme of the Conference, i.e., 'Systems for Sustainable Healthcare Habitats' comprising the following eminent persons: Dr. Anoop Srivastava (Moderator), Dayalbagh, India, Dr. Tom Rand, ArcTern Ventures, Canada, Prof. Mo Jamshidi, University of Texas, at San Antonio, USA, Prof. Laxmidhar Behera, IIT Kanpur, Prof. Satya Prakash, Dayalbagh, India, Mr. M. Asad Pathan, Society for Preservation of Healthy Environment and Ecology and Heritage of Agra (SPHEEHA), India and Dr Anjoo Bhatnagar, Saran Ashram Hospital, Dayalbagh, India.

A session with award ceremony followed, where the different SSI awards were conferred. The session was chaired by Prof D Bhagwan Das, Secretary SSI. Prof Satya Prakash received the award in person. Prof Satya Prakash served as Head, Nuclear Chemistry Section, Radio Chemistry Division, Bhabha Atomic Research Centre (BARC), Mumbai from 1964 to 1991 and subsequently joined DEI as Professor and Head, Chemistry Department. Dr PS Sudhish and Mr Karan Narain also received the award in person while the others received it in the virtuous virtual mode.



Lifetime Achievement Award

1. Prof. Mo Jamshidi, University of Texas at San Antonio, USA ,
2. Dr. Tom Rand, ArcTern Ventures, Canada, 3. Prof. Satya Prakash, Dayalbagh.

National Systems Gold Medal

1. Prof. Ranjan Bose, Director, IIIT, Delhi.

Varshney Award

1. Dr. Arun Gupta, AIIMS, New Delhi, 2. Prof. Aaditeshwar Seth, IIT, Delhi, 3. Dr. Prem Sewak Sudhish, Dayalbagh Educational Institute, Agra.

Vikram Award

1. Mr. A. K. Saxena, Director, ADRDE, Agra, 2. Mr. Karan Narain, TCS Research, New Delhi, 3. Dr. Surat Paravatam, Atal Incubation Centre, CCMB, Hyderabad.

Young Systems Scientist Award

1. Dr. N. Apurva Ratan Murty, MIT, USA, 2. Dr. Aarat Kalra, Princeton University, USA, 3. Dr. Tanmay Nath, Johns Hopkins University, USA.

A short cultural programme was also presented by the students of the Dayalbagh Educational Institute. The programme was immensely appreciated. The programme ended with the National Anthem.



General Manager North Central Railway Visits DEI

Shri Pramod Kumar, General Manager North Central Railway, visited DEI on 7 August 2021. He is an illustrious alumnus of the Institute. He graduated from the Faculty of Engineering in 1984 with a degree in BSc. Engineering (Electrical). On his arrival, Shri Kumar was given a warm welcome by the Director, DEI at the Central Administrative Office. Through a film on DEI, Shri Kumar was acquainted with the progress that has taken place since the time he studied here. He was shown a glimpse of the variety of skill-works going on in DEI keeping pace with the government's initiatives. Later, Shri Kumar went to Faculty of Engineering and paid his obeisance to his *alma mater*. Shri Kumar assured that he would try his best to contribute towards the progress of DEI.

Shri Pramod Kumar was accompanied by Shri Sushil Kumar, Divisional Railway Manager, Agra-I.

DEI and Stanford University step up collaboration

Dayalbagh Educational Institute is set to take a giant leap in its collaboration with the Prakash Lab in Department of Bioengineering at Stanford University. The lab is well-known for its curiosity-driven science-based frugal innovation, bringing science to every child's doorstep at an almost zero cost – through what is now commonly known as *Jugaad* innovation. The lab has also made significant contributions in response to COVID-19 challenges.

One of the most widely known innovations from the Prakash Lab is a paper origami microscope (foldscope) that has been in use for DEI school students not only in Dayalbagh but also in the deep rural areas and tribal hinterlands, providing frequent opportunities for interaction with Stanford University's faculty, alumni and students. The young population at these remote locations, being able to practise hands-on science with their own scientific instrumentation are attracted towards Science, Technology, Engineering and Mathematics (STEM), and the use of scientific method in local problems such as those involving agriculture and dairying.

DEI also holds regular Foldscope and Frugal Innovation camps throughout the country, where students not only receive their personal portable frugal microscopes, but they also assemble their own microscopes (foldsopes), to develop appreciation for the art of frugal innovation.

Cultural and Academic Exchange Experience with The University of Hong Kong (HKU) Produces Innovative Contextual Projects

Dayalbagh Educational Institute has a reciprocity-based cultural and academic faculty and student exchange programme with University of Hong Kong, consistently ranked as one of the leading Universities in Asia.

While exercising proactive precaution in travel to Hong Kong during COVID-19, DEI turned the calamity into an opportunity by enabling participation from a large number of students for an extended duration through an online exchange programme in May – June, 2021. Students from both Universities teamed up into small groups to work on socially relevant projects, towards the fulfilment of the United Nations Sustainable Development Goals (UN SDGs). The projects were presented before a wide audience at the end of the exchange programme and were widely admired.

The titles of the collaborative projects presented jointly by students of DEI and HKU were, 'Smart cities and blockchain'; 'Gender stereotyping in education: A study of gender stereotypes affecting education and child mindset in India and Hong Kong'; 'Managing symptoms of anxiety and depression triggered by COVID-19: A multi-perspective approach'; 'Comparative study on the pandemic-induced impacts on the socio-economic sustainability of developing countries' and 'Cross-cultural study of impact of folk art namely Saura on stress during the COVID-19 pandemic'.

The student groups were mentored jointly by the Faculty from both Universities.



DEI Students successfully complete collaborative coursework with Seneca College, Canada

Dayalbagh Educational Institute utilizes its strong technology infrastructure for interactive teaching-learning through multi-way videoconferencing. DEI students regularly participate in collaborative courses with Seneca College of Applied Arts and Technology, a multiple-campus public college located in the Greater Toronto Area of Ontario, Canada and one of the largest vocational education providers in the province. The DEI-Seneca partnership not only allows students from both institutions to study together in an extended classroom setting but also to work on joint projects.

During the 2021 winter term, fourteen students from DEI received certificates of achievement for successful completion of projects on “Computer Network Design” collaboratively with nineteen students from Seneca College as part of the course NET455 - Networking Essentials. Another six students from the DEI main campus and DEI forest tribal area campus in Rajaborari received certificates of participation for successful completion of projects on “Web and Video Publishing on the Internet” while working in inter-continental teams comprising six students from Seneca College as part of the course ICO155 - Introduction to Computers. The courses were supported by the faculty from both institutions.

Two students of Soami Nagar Model School, New Delhi win the prestigious National Swachhta Saarthi Fellowship

The office of the Principal Scientific Adviser to the Government of India invited applications from students from schools, colleges, universities, institutes, and citizens from self-help groups or community that have done previous work or are currently engaged in initiatives on waste management, awareness campaigns, waste surveys, studies, etc. for the award of “Swachhta Saarthi Fellowship” under the “Waste to Wealth” Mission of Government of India.

After receiving an overwhelming response from across 33 States and Union Territories nationwide, 127 *Swachhta Saarthi* Fellows have been selected under Category-A (school students from 9th to 12th standards engaged in waste management community work). Two students Nihar Malhotra and Arya Swaroop, (Both from Class X) from Soami Nagar Model School, New Delhi have won this prestigious National Fellowship. The selected students will not only be provided fellowship but they will also get an opportunity to showcase their initiatives at suitable forums.



Independence Day Celebration

The 75th Independence Day was celebrated at Dayalbagh Educational Institute on 15 August 2021 with zeal and enthusiasm while adhering to the Covid-19 norms. Shri G.S. Sood, President, DEI and Radhasoami Satsang Sabha, hoisted the National Flag as the Chief Guest on the occasion. A grand March Past was presented by the students of different faculties, schools, and colleges of DEI. Shri Sood highlighted the significance of the sacrifices made by the freedom fighters and praised the role played by DEI in propagating value-based education in the country.

Director of DEI, Prof. P.K. Kalra mentioned the new initiative taken by DEI in the form of Art, Beauty, and Creativity (acronym ABC) and emphasized that we should all be ingenious and creative in bringing our own original creation to the world. Winner Trophies were given to the teams of the March Past. Among the boys, Technical College and DEI Band jointly won the prize whereas, in the category of girls, DEI Prem Vidyalaya was declared the winner. A Special March Past Prize was also given to DEI Saran Ashram School Children. Special prizes were also given to the winners of 'Swatantrata ka Amrit Mahotsav' event that was organized earlier.



Faculty News

Faculty of Commerce

Student's Achievement:

Mr. Pranav Tyagi, a Final Year student of B.Voc.(Accounting and Taxation) has got placement with "Think and Learn Private Limited" (Unit of BYJU'S) as a Business Development Trainee-Sales. He is the student of the First batch of this programme who has graduated in Academic Session 2020-21.



- A five- day Faculty Development Programme under the AICTE ATAL Scheme was organized by Department of Electrical Engineering, DEI on the theme, “Microgrid an Opportunity: Electric Vehicles and Renewable Energy Resources” from 5-9 July 2021. The FDP successfully realized its aim to improve and scale up the research skills of the faculty members for enhancement of their practical knowledge on microgrid opportunities by a series of lectures delivered by eminent speakers. Faculty and researchers from different institutions participated in this FDP from different parts of the country.

Various activities were conducted by the IEEE Student Branch of DEI in the last few months. Some of them are mentioned below:

- Alankrit-2.0 Logo-Making Competition was jointly organized by IEEE Student Branch and Industry Application Society at Dayalbagh Educational Institute, Agra on 12 April 2021.

- “Ingenium” Logo-Making Competition was jointly organized by IEEE Student Branch and Women in Engineering Affinity Group at Dayalbagh Educational Institute, Agra on 14 April 2021.

Faculty of Engineering

Staff News:

- Prof. G S S Babu, Prof. D Bhagwan Das and Prof. A K Saxena of Department of Electrical Engineering, have received a grant of Rs. 1.86 Crores from DST under Mission Innovation Call for R & D project entitled 'Different Energy Vector Integration for Storage of Energy (DEVISE)'. The project is effective from January 2021.

The other Indian partners are IIT Roorkee (Rs. 1.23 Crores) and IIT Delhi (Rs. 52 Lacs). The international partners are FBK, Italy, UMEA University, Sweden and The Arctic University of Norway, UiT, Norway. Primarily, DEI's role is in design, development, and demonstration of Electric, Thermal and Biogas energy systems.

- Ms. Shamima Khatoon, Research Fellow, got the DST project of around 28 lacs under Women-Scientist Scheme-B (WOS-B). The goal of the project is to develop a Lab-on-chip Biosensor for rapid and Label-free Virus detection. A new Additive Manufacturing Technique will be used to develop the ultrasensitive biosensors. The project will provide a diagnosis kit for the rapid or live (real-time) detection of viruses using a compact POC (point of care) medical biosensor.

Students' Achievements:

- Mr. Vageesh Amoriya, a third year BTech Electrical Engineering student, secured the 1st position in the online Debate Competition on the topic, esults and Challenges of 5G in India Organized by the IEEE Student Branch at Indian Institute of Information Technology, Allahabad, on 17 January 2021.

- Ms. Shreya Verma, a third year BTech Electrical Engineering student, secured the 1st position in the online Poetry Making Competition organized by the IEEE Student Branch University School of Information, Communication and Technology, New Delhi, on 11 June 2021.

- Ms. Priyanshi Nagpal, a third year BTech Electrical Engineering student, was the 1st Runner Up in an online Poster-Making competition organized by the IEEE Student Branch at Madan Mohan Malaviya University of Technology, Gorakhpur, on October 2021.

Faculty of Science

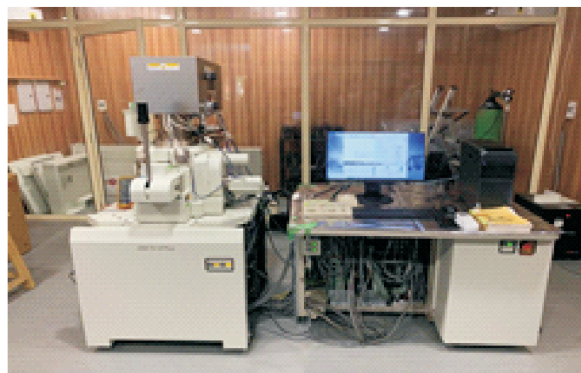
Project Sanctioned:

- An Indian patent has been granted to staff and research students of DEI's Chemistry Department on “Partially Crystalline Nitrogen Doped Titanium Dioxide for Unbiased Photoelectrochemical Water Splitting for Hydrogen Generation” on 30 July 2021 for a term of 20 years, beginning from 30 August 2019 in accordance with the provisions of the Patents Act, 1970.

- A Project entitled “Socio-economic Empowerment of the Tribals in the Rajaborari Estate, Madhya Pradesh through Scientific and Technological Interventions” has been sanctioned to Dr. Anita Lakhani (PI, Dept of Chemistry), Dr. T. Prem Saran and Dr. Rajeev Ranjan (Co-PIs, from Dept of Botany) worth Rs. 2.19 Crore, for a period of 3 years by the Science for Equity Empowerment and Development Division (SEED), Department of Science and Technology, New Delhi.:

- A Field Emission Scanning Electron Microscope (FE-SEM) worth Rs. 2.0 Crore has been procured from M/s Jeol, Japan from MNRE Research Grants of the Project on PEC splitting of water for hydrogen generation. This equipment has the capability of magnifying objects up to 50- 60 lakh times with a resolution of 0.6 nm.

- A Thermal Desorption Unit (TDU) worth Rs. 35 lakhs procured under the FIST grant is under installation hyphenated to GC-MS. This combined unit would enable simultaneous sampling and analysis of volatile organic compounds present in the gas phase.



Staff News:

- Professor Sukhdev Roy of the Department of Physics and Computer Science presented a talk on, “Computational Modeling of Optogenetic Neuronal Signaling”, at the Optogenetics Innovation Laboratory Workshop, at Stanford University, June 22-24, 2021, through video conferencing. He has been elected a Senior member of the Society of Photo-Optical Instrumentation Engineers (SPIE), USA, 2021. He reviewed research papers for IEEE Photonics Journal, IEEE Access, Optical Engineering, Materials Research Express, Optics and Laser Technology and Journal of Optics. He supervised an IASc-NASI-INSa Summer Research Fellow from the Dept. of Electronics and Telecommunication Engineering, Indian Institute of Engineering Science and Technology, Shibpur, on Design of Ultrafast All-optical Computing Circuits with Silicon Microring Resonators, during June-July 2021.

Students' Achievements:

- Mr. Zeeshan, Research Scholar in Department of Physics and Computer Science was awarded the Second Prize for presenting an elevator pitch on the topic “Sensor for Water Quality Management” in the 'Innovation Challenge-2021' organized by GLOBAL ALLIANCE FOR RAPID DIAGNOSTICS (GARD) Michigan State University, USA from June 25-26, 2021, and was awarded 200 USD as the prize money. This virtual event was organized on the Theme: “2021 Innovation Forum: Bridging Technologies and Market Needs”.

- Himanshu Bansal, Research Scholar in Department of Physics and Computer Science, was awarded



the Best Paper Award, for presenting the paper entitled, “Low-power and High Frequency Optogenetic Retinal Prosthetics with ChRmine”, co-authored by Neha Gupta and Prof. Sukhdev Roy, at the 44th National Systems Conference from May 22-23, 2021.

- Ms. Kirti Singh, Research Scholar, Chemistry Department, was selected as a Youth Panellist for Clean Air Asia for their Virtual Youth Dialogue event held on 5 June 2021 on the topic "Reimagine, Restore and Recreate for the Clean Air in Your City".

District Green Champion Certificate to DEI

The Dayalbagh Educational Institute has been recognized as District Green Champion for Agra District for the Academic Year 2020-21 by the Mahatma Gandhi National Council of Rural Education, Department of Higher Education, Ministry of Education, Govt. of India for successfully setting up the Swachhta Action Plan Committee, adopting and implementing best practices in the areas of Sanitation, Hygiene, Waste Management, Water Management, Energy Management and Greenery Management.

A certificate to this effect was given in presence of Hon'ble Shri Bablu Kumar IPS, Senior Superintendent of Police on 19th September, 2021.

<p>तारीख / Date: 19-08-2021 ज्ञापन संख्या / Memo no: MGNCRE/SAP/Agra/318</p>	 भारत सरकार / Government of India महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद / Mahatma Gandhi National Council of Rural Education उच्च शिक्षा विभाग/Department of Higher Education शिक्षा मंत्रालय / Ministry of Education	 <small>Where there is Rural Wellbeing There is Universal Prosperity</small>
<h3 style="color: green;">District Green Champion Certificate</h3> <p>This is to certify that <i>Dayalbagh Educational Institute (Deemed University)</i> is hereby recognized as <i>District Green Champion</i> for <i>Agra</i> District for the Academic Year 2020-21. The Institution has successfully set up the Swachhta Action Plan Committee, adopted and implemented best practices in the areas of Sanitation, Hygiene, Waste Management, Water Management, Energy Management and Greenery Management.</p> <p>This certificate is given in the presence of <i>Hon'ble Shri Bablu Kumar IPS, Senior Superintendent of Police.</i></p> <p>August 2021</p> <div style="text-align: right; margin-top: 20px;"> Dr W G Prasanna Kumar Chairman MGNCRE, Ministry of Education Government of India </div>		

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