



नैनो एवं मृदु पदार्थ विज्ञान केंद्र
विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार के अधीन एक स्वायत्त संस्था
**CENTRE FOR NANO AND
SOFT MATTER SCIENCES**
Autonomous Institute under the Dept. of Science and Technology, Govt. of India







वसुधैव कुटुम्बकम्
ONE EARTH • ONE FAMILY • ONE FUTURE

75 Azadi Ka Amrit Mahotsav



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CENTRE FOR NANO AND
SOFT MATTER SCIENCES

THE FOUNDATION STONE OF THE CAMPUS WAS LAID ON
MONDAY 01 AUGUST 2016

by

BHARAT RATNA PROFESSOR C. N. R. RAO, F.R.S.
Chairman, Governing Council

In the august presence of

SHRI M. R. SEETHARAM
Honble Minister for Planning, Statistics,
Science & Technology & Kodagu District In-charge
Govt. of Karnataka



... In pursuit of global excellence in Science
and to nurture Indigenous Technology
for the betterment of Our Country.

PROF. G. U. KULKARNI
Director

nanosoft



The driving force of CeNS: Its Mission Statement



Azadi Ka Amrit Mahotsav (AKAM) was initiated by the Government of India to celebrate & commemorate 75 years of progressive Independent India, the glorious history of its people, culture and achievements. In the true spirit of the Prime Minister's vision, when he called for this Mahotsav to be celebrated as a 'Jan-Utsav', the **Centre for Nano and Soft Matter Sciences (CeNS)** conducted 75 events starting from 12 March 2021 till the iconic event on 15 August 2022. Each of these events was aimed at re-living the evolutionary journey that the nation has gone through since 1947, while at the same time paving the way for fuelling the spirit of **Aatmanirbhar Bharat**.



The central themes for these events have been:

≡ **Cutting-edge Science**

- ⚙ Discourses on advanced topics of nano and soft matter

≡ **Expand the Horizon**

- ⚙ Science Lectures beyond nano and soft matter

≡ **Health and Wellness**

- ⚙ Awareness sessions, Medical Camps

≡ **Spread Science**

- ⚙ Science outreach programmes

≡ **Bonding Together**

- ⚙ In-house cultural/physical activity events focusing on spreading the message of oneness
- ⚙ Women empowerment @ CeNS

The following pages provide a nutshell description of these events.

- AKAM Coordination Committee



FOREWORD

India's "Tryst with destiny" started 75 years ago. To mark this momentous occasion, the Hon'ble Prime Minister of India, Shri Narendra Modiji gave a clarion call to commemorate and celebrate "Azadi Ka Amrit Mahotsav" by conducting events that would activate India 2.0, and awaken the spirit of Aatmanirbhar Bharat.

The Centre for Nano and Soft Matter Sciences (CeNS), with a vision to work "in pursuit of global excellence in science and to nurture indigenous technology for the betterment of our country", has been conducting research of the highest quality which is globally well recognized. I firmly believe this was only possible due to the tireless efforts of the motivated students and scientific staff, ably assisted by equally enthusiastic administrative and support staff. A hallmark of any good scientific institution is to be dynamic and always at the forefront of research. Another essential characteristic of such an institution is its ability to convey emerging science to the peer research community and society at large, besides motivating the future generations to pursue the path of science.

It was a unanimous feeling among CeNSians that the Azadi Ka Amrut Mahotsav is an excellent opportunity to (i) further expand the vista of scientific knowledge of its researchers within and beyond the realm of core competencies, (ii) carry out recreational and welfare activities and (iii) augment its already vibrant science outreach programme. To achieve these goals a wide variety of events were chalked out and executed. This compendium is a collection of memories from 75 of those events. For the depiction to be seen

in the proper perspective the collection is classified – based on the target group aimed at – into

five categories I am confident that this panoramic view conveys our comprehensive endeavour in this regard. We welcome comments and suggestions from you to help us improve and also motivate us to march forward with added vigour and virtue.

I wish to take this opportunity to thank the leadership of DST, especially its past and present Secretaries, Prof. Ashutosh Sharma and Dr. Srivari Chandrasekhar, the Chairman, Prof. Krishna N Ganesh, and other members of the Governing Council of CeNS, and the Research Advisory Board led by Prof. D. D. Sarma, for all their guidance, support and encouragement throughout these efforts. Our sincere gratitude goes to all the speakers and resource persons for enriching us with their knowledge and service. The active and enthusiastic participation of all the visitors and participants of these events is much appreciated. Words are not enough to express my appreciation to every CeNSian for rising to the occasion by contributing in multiple ways to make the entire programme a resounding success. To conclude, let me on behalf of all the CeNSians, pledge to continue this spirit of Azadi Ka Amrut Mahotsav and expand its horizon and to plan for the current year events with even larger participation on the lines of Jan Bhagidari.



Prof. B L V Prasad
Director, CeNS



डॉ. एस. चंद्रशेखर
Dr. S. Chandrasekhar



सचिव
भारत सरकार
विज्ञान एवं प्रौद्योगिकी मंत्रालय
विज्ञान एवं प्रौद्योगिकी विभाग

Secretary
Government Of India
Ministry of Science and Technology
Department of Science and Technology



26th August, 2022

MESSAGE

I am happy to learn that the Centre for Nano and Soft Matter Sciences (CeNS) has successfully conducted 75 events under the aegis of the Azadi Ka Amrit Mahotsav (AKAM), a Government of India initiative to celebrate 75 years of India's independence.

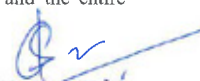
It is notable that these activities were held in the true spirit of celebrations and not for merely completing numbers. While the lectures by pioneering researchers in polymers, aerospace, biomedicine fields provided the impetus to further diversify one's research interests, the popular-level talks delivered on topics such as wild life conservation, scuba diving etc. certainly enthralled the young and the seasoned minds.

It is also heartening to note that the CeNS community augmented its outreach programmes aimed at stimulating the scientific vigour in the minds of school/college students. A special event worth mentioning is *रक्षाबंधन* celebration with the specially-abled children, which aimed at getting these children into the mainstream and assuring them the care required. This is a novel concept that has the potential to be well nurtured and I recommend that the Centre may develop this into a full-fledged programme in a fitting manner.

I am sure that the targeted communities, both within the scientific groups and the society at large, have benefitted much from these programmes.

It is a matter of delight that a handy compendium "*A Glimpse of AKAM@CeNS*" is being brought out on this occasion. In the compendium, the events are categorized under five appealing sections, displaying the multidimensional aspects that have been covered and fulfilling the scientific and social responsibilities of a premier scientific institute of the country. This clearly suggests that much effort has gone in conceptualizing, planning and implementation of the activities as well as in bringing out this compendium.

I compliment the Director, AKAM Committee members, and the entire CeNS family for all efforts in this noble task.


(S. Chandrasekhar)

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Message

On behalf of the CeNS Governing Council, I wish to express our appreciation to the Director, the AKAM Committee members, and the entire CeNS family for their worthy efforts in conducting a wide variety of events and bringing a nice compendium documenting the events on the momentous occasion of Azadi Ka Amrit Mahotsav.

The programs/events conducted during the year covered various dimensions fulfilling the scientific and social responsibilities of a premier research organization like CeNS. I am glad to see that special care has been taken to document the salient features under five sections reflecting the effort that has gone in conceptualizing, planning and implementation of these activities. The list of programs/events conducted by the Centre using the AKAM platform is very impressive. The scientific/technical talks by many eminent personalities of international repute, certainly would have immensely enriched the CeNSians. Other activities that attracted my attention are social activities such as the medical and blood donation camps, provident fund awareness programmes for the CeNS support staff have general benefits to staff. Science outreach and dissemination has been a strong forte of CeNS. And a notable and highly commendable feature has been conducting events for the speech- and hearing-impaired children emphasizing visual appeal through clever design of experiments. CeNS has served as a role model to be followed by other organizations as well.

Kudos to every member of the CeNS family for their enthusiastic and passionate efforts in making AKAM@CeNS a great success.

K. N. Ganesh

Director, IISER-Tirupati,
Chairman, Governing Council, CeNS

20 Sept 2022.



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Dr. Dipankar Das Sarma

Honorary Professor and CSIR Bhatnagar Fellow



I am delighted to note that the Centre for Nano and Soft Matter Sciences (CeNS) is bringing out a compendium capturing the highlights of events conducted under the Azadi Ka Amrut Mahotsav Banner. It is a beautiful way to record the impressive array of wonderful events organised by the Centre, as it allows us to remember and celebrate these moments in the future too.

In today's world, it is imperative that a premier scientific research organization, such as CeNS, conducts research of high standards to remain globally competitive. However, it is equally important that every scientific institution actively engage in the dissemination and propagation of science, promoting its values, enlightening society at large, and contributing to its growth and welfare. Reading through the following pages of this compendium, I am glad to note that CeNS has taken its social responsibilities in earnest. The lectures by pioneers covering many important areas of science and technology developments held under the aegis of Azadi Ka Amrut Mahotsav are particularly well-aligned with the spirit of CeNS. Many of these lectures underlined the rewards of resilience and steadfastness in the face of seemingly unsurmountable difficulties and hardships in research, emphasising the importance of out-of-the-box thinking and a value system that our young researchers must imbibe to ensure success in their chosen spheres of scientific and technological activities. I was particularly impressed by the science dissemination programmes designed to inculcate scientific temper in the minds of school/college students. I was deeply touched by the Centre's efforts to reach out to the specially-abled children. To see these children immensely enjoying and being excited while learning about the underlying scientific principles of interesting phenomena must have been a blissful experience for those who conducted this event.

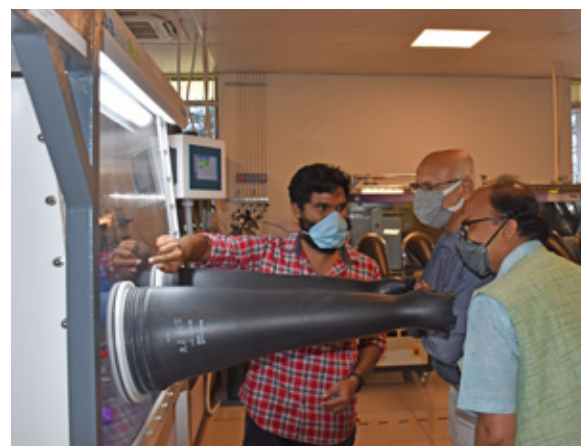
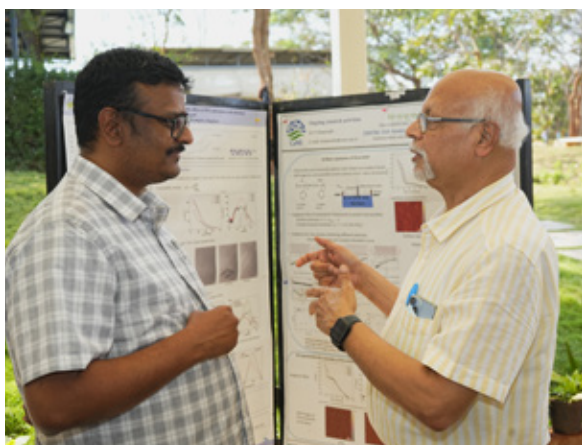
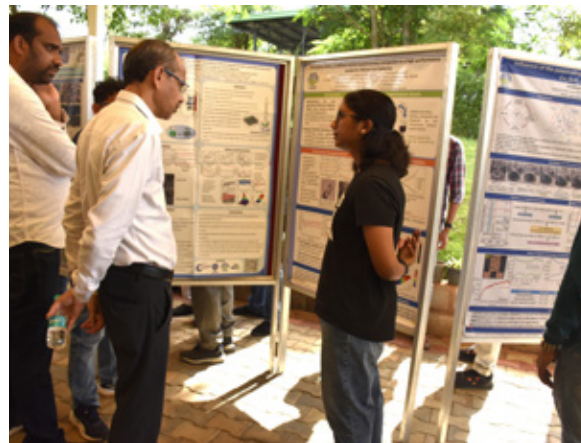
I am confident that these events, which are the results of meticulous planning, have raised the bar that CeNS has set for its research and outreach programmes. I take this opportunity to congratulate and send my best wishes to all the CeNSians in achieving these goals.

D. D. Sarma

Chairman, Research Advisory Board, CeNS









CUTTING EDGE SCIENCE

DISCOURSES ON ADVANCED TOPICS OF NANO AND
SOFT MATTER SCIENCES



Prof. Sameer Sapra, IIT-Delhi



Prof. Sudip Roy, Prescience Insilico Private Limited



Prof. Mukund Thelakkat, Bavarian Polymer Institute



Dr M S Santosh, CSIR-CIMFR



Prof. Rahul Banerjee, IISER-Kolkata





Cutting-edge Science

DISCOURSES ON ADVANCED TOPICS OF NANO AND SOFT MATTER

A unique and key feature of CeNS is the seemingly different nature of the two systems of materials on which its research is focused: Nano materials and soft matter. However, the endeavour has been to take a comprehensive approach and achieve the best of both worlds, making the task a truly interdisciplinary one. Evidently, CeNSians strive to strike a good balance between being an expert in the nano/soft domain while always eyeing possible extensions to the other domain. The topics covered by the lectures under this category were carefully chosen to depict the interdisciplinary aspect of the interest in the CeNS community. Professor Mukundan Thelakkat from the University of Bayreuth, Germany gave an endearing talk describing design and development strategies using novel tailor-made functional molecules, polymers and block copolymers, which combine organics with other functional inorganics to get hybrid systems for applications in solar cells, biosensors and new generation batteries.

Lectures by Dr. Pramoda Kumar Nayak, IIT Madras and Prof. Sameer Sapra, IIT Delhi, dealt with van der Waals heterostructures. In the presentation by the former, there was literally a twist: the subject was Twistronics, describing how the angle (the twist) between layers of two-dimensional materials can change their electrical properties. Professor Sapra discussed the versatility of MoSe_2 , a transition metal dichalcogenide and its heterostructures for applications in catalysis and optoelectronics. Speaking on the occasion of the birthday of the Nobel Laureate Prof. C.V. Raman, the Director of IISER, Bhopal, Prof. Umapathy explained in depth the applicability of laser spectroscopy across the fields of physics, chemistry and biology, including medicine. The importance of water as a life-sustaining material and its potential deployment for energy generation cannot be overemphasized. Both Prof. Ashok Ganguly, IIT Delhi and Dr. M. S. Santosh from CSIR-CIMFR elaborated on aspects like charge transfer



Prof. Sanat Kumar, Bykovsky Professor of Chemical Engineering, Columbia University delivered Memorial lecture on Founder's day on Aug 10, 2022





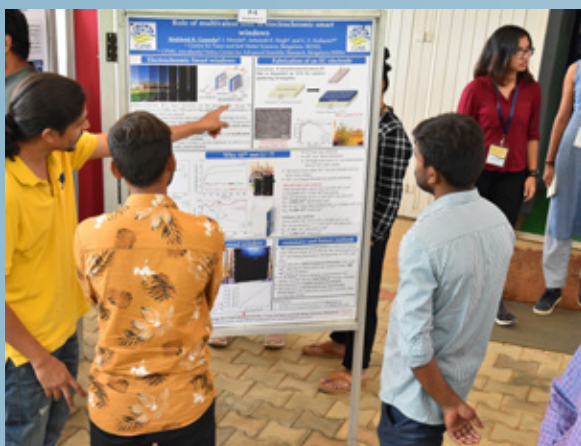
dynamics and synthesis of multi-functional materials for these purposes. As a budding young researcher, Alex C, a senior research fellow at CeNS, gave an overview of the chemical and biological sensors for viral detection. In recent times, simulations have gone hand in hand with experimental work, either to predict the properties or to substantiate the experimental results and make projections. While Prof. Sudip Roy, an academic-turned-entrepreneur based in Bangalore, reviewed his contributions to the development and application of particle-based simulation methods in soft materials, Prof. Ayan Dutta, IACS, Kolkata talked about pseudo-Jahn-Teller distortions in two - dimensional atomically thin monolayers. Distinctive lectures delivered on two specific occasions need a special mention. CeNS has been celebrating the birthday of its Founder, Professor S. Chandrasekhar, as Founder's Day. This year the lecture to commemorate this occasion was delivered by Prof. Sanat Kumar, Bykovsky Professor of Chemical Engineering, Columbia University, USA, who made

a lucid presentation on a critical concern globally: Recycling of polymer waste. After recalling the seminal contributions of the Founder, the speaker touched on aspects such as polymer nanocomposites, including self-assembly, microstructure, glassy segmental dynamics and vitrification, elasticity and reinforcement, to demonstrate the activities in his lab, which bring together theory, modelling and experiments to get a comprehensive picture of the issue.

An MOU has been signed between CeNS and CMTI, a pioneering R&D institute in technology manufacturing sector, to initiate collaborative academic and research programs in manufacturing technology. The CMTI Director and faculty visited CeNS on September 22, 2022 and discussed about the various modalities of operation such as joint project proposal to funding agencies, course on advanced manufacturing technology etc.



An MOU has been signed between
CeNS and CMTI



CeNSians deeply engrossed in the proceedings of the In-House Symposium



Prof. Mewa Singh, University of Mysore





Dr.Pramoda Kumar Nayak	IIT-Madras	Twistronics: A Recent Avenue in van der Waals Heterostructures		June 21, 2021
		CRF Orientation Workshop to Researchers on Scientific Equipment		June 25, 2021
Mr Alex C	SRF, CeNS	Chemical and Biological Sensors for Viral Detection		July 09, 2021
Prof. S. Umapathy	Director, IISER, Bhopal	Laser spectroscopy: From physics to chemistry, biology and medicine	Sir. C.V. Raman's Birthday	September 3, 2021
Prof Ashok K Ganguli	Department of Chemistry, Department of Materials Science & Engineering, IIT, Delhi	Design of nanostructured materials and understanding their charge transfer dynamics for water splitting applications	New-era Energy Colloquium	April 1, 2022
Prof. Sudip Roy	Prescience Insilico Private Limited	Development and Application of Particle-Based Simulation Methods in Soft Materials	Special Lecture	April 11, 2022
Prof. Mukund Thelakkat	Bavarian Polymer Institute	Functional Polymers - Design, Architecture and Applications in Solar cells, Biosensors and Batteries	Special Lecture	April 13, 2022
Prof. Ayan Datta	IACS, Kolkata	Pseudo Jahn-Teller Distortions in Two - Dimensional Atomically Thin Monolayers	Special Lecture	April 21, 2022



July 1, 2022



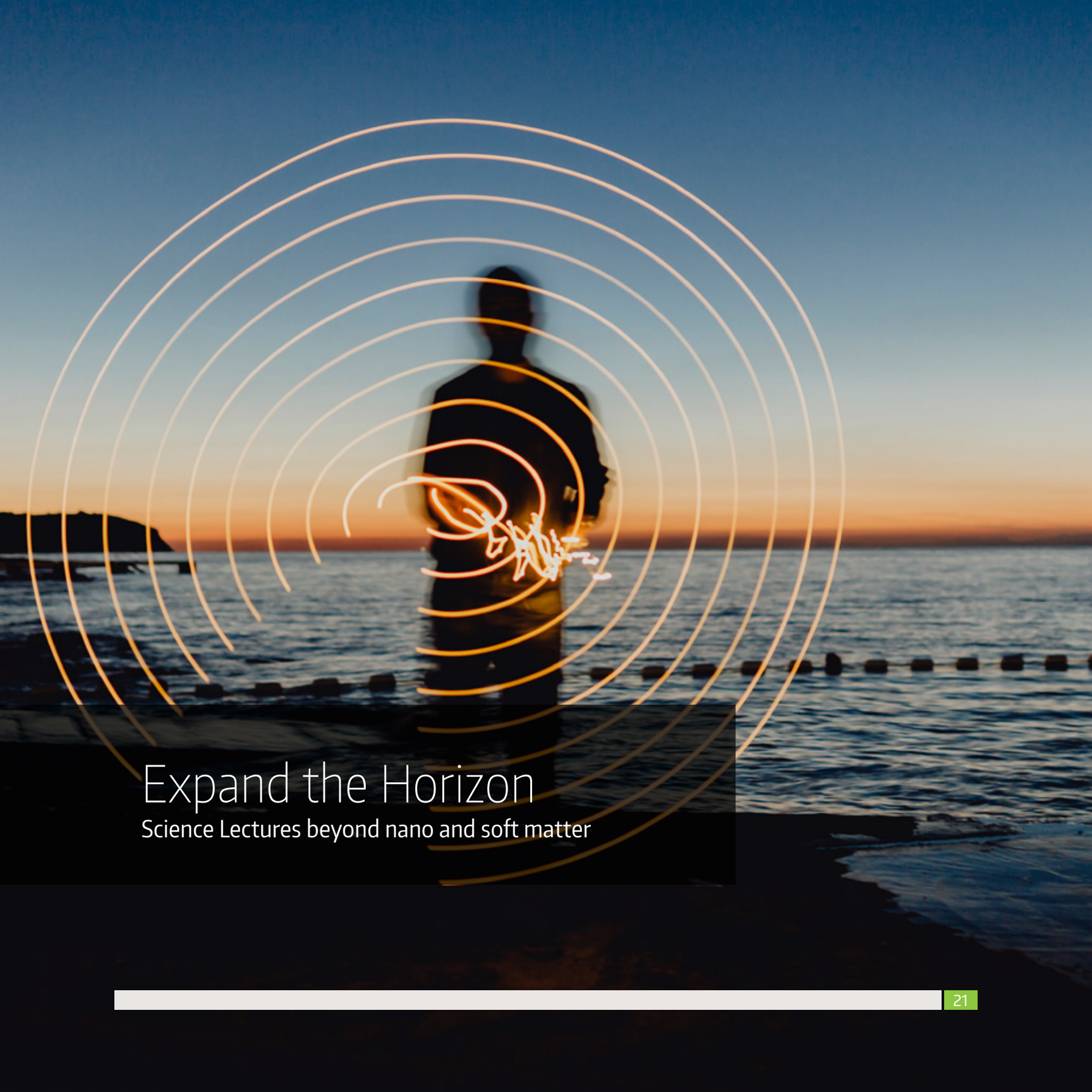
November 25, 2022

CeNS researchers gathering on the In-House Symposia





Prof. Sameer Sapra	IIT-Delhi	MoSe ₂ - a versatile transition metal dichalcogenide and its heterostructures for applications in catalysis and optoelectronics		April 26, 2022
Dr M S Santosh	CSIR- CIMFR	Multi-functional Materials as the Future of Waste water Treatment, Electrocatalysis and Energy Storage		May 5, 2022
Prof. Mewa Singh	Distinguished Professor, University of Mysore	What have we learnt from the monkeys around us? A journey of a half-century in the Indian jungles	Biodiversity Day	July 1, 2022
Prof. Sanat Kumar	Bykovsky professor of Chemical Engineering, Columbia University	Modeling the Recycling of Polymer waste	Founder's Day	August 10, 2022

A person stands in the ocean at sunset, their silhouette centered. Concentric orange light circles, resembling ripples or a light trail, emanate from the person's chest area. The background shows the sea and a distant coastline under a twilight sky.

Expand the Horizon

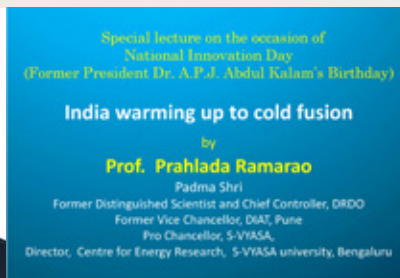
Science Lectures beyond nano and soft matter



Prof. G U Kulkarni and Dr S Angappane with IP Hackathon winners



Prof. Ashok K Ganguli, IIT-Delhi



National Technology Day



Prof. Kota Harinarayana, Honorary Advisor to DG-CSIR, interacting with Director and Scientists at the Prototype Gallery, CeNS, on the occasion of National Technology Day.

Expand the horizon

Science Lectures beyond nano and soft matter

As part of the AKAM, CeNS conducted a series of events/talks centering on topics that are beyond the scope of research activities practiced at the Centre. The aim was to introduce the CeNS community to a wide variety societal issues that they may have heard about yet never paid attention to and in the process expand their perspective and thought process. The theme of the talk/event series aptly named 'Expand the horizon' saw several experts speaking to the CeNS community on topics ranging from intellectual property rights to autism to biodiversity!

The series started with a weeklong celebration of World Intellectual Property (IP) Day (26 April to 1 May 2021). On 26th, industry experts from India, Japan, Australia, UAE and U.S. shared their views on how start-ups and small and mid-size enterprises (SMEs) can leverage IP. This was followed by thought-provoking panel discussions on innovations and the future of IP for SMEs by eminent personalities such as Dr. R. A Mashelkar,

Prof. Anil Gupta, Dr. Uday Salunkhe, Mr. Girish Joshi, Mr. Ajay Thakur, Mr. Hiroyuki Hashimoto, and Dr. Nicola Maxwell. CeNS in collaboration with Legasis Services (empanelled IP firm) also put together an IP Hackathon contest wherein three problem statements were provided to the registered participants. The winners received certificate of appreciation from Prof. G U Kulkarni. On the occasion of World Environmental Day (June 5, 2021), Dr. Ganesh T B from ATREE, Bengaluru, spoke about how one can be conscious and proactive to protect our environment. The researchers were made aware of the path taken by some of the most successful entrepreneurs by an inspirational talk given by Dr. Arun M. Isloor, Professor & Head, Department of Chemistry, NIT-Suratkal, Mangalore on 14 June 2021. The Teacher's Day (3 September 2021) was marked by an insightful talk by Prof. S. Sivaram B, Honorary Professor and INSA Senior Scientist, IISER Pune who spoke on sustainable Science emphasised how the future of sustainable civilization rests on three Es, namely, energy (and

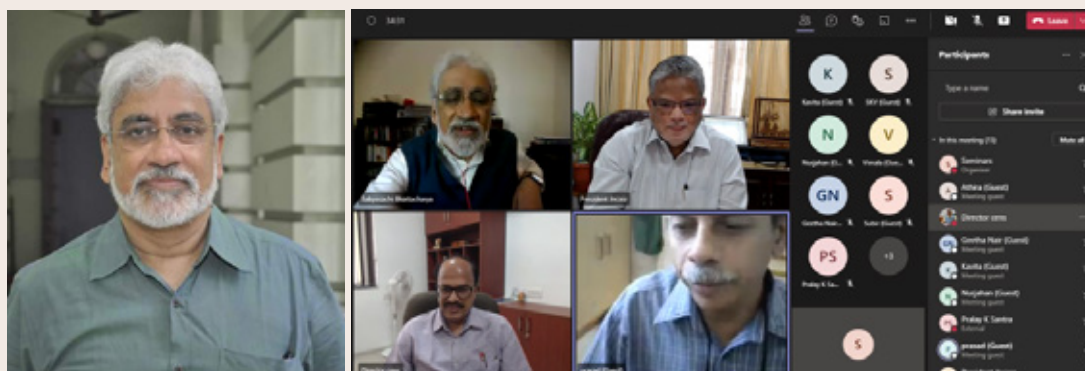




Prof. Ashish Lele, Director, CSIR-NCL, Pune, delivering lecture on "Green hydrogen for green future" on 6 April 2022



National Science Day




Prof. Sabyasachi Bhattacharya (top-left), Director, TCG-CREST, Kolkata, speaking on "Perfectly Reasonable Approximations: Dealing With the Real World" as part of National Science Day celebrations, 28 February 2022.

materials), ecology (and environment) and equity. A Special Lecture on the occasion of National Innovation Day was organized on “India warming up to cold fusion” by Prof. Prahlada Ramarao, Director, Centre for Energy Research, S-VYASA university, Bengaluru, on October 12 2021. Other interesting talks under the series “Expand the horizon” included “Science-based deep tech startups: Some learnings and insights from Venture Center” by Dr. V. Premnath, Head, NCL Innovations at CSIR-NCL, Founder Director, Venture Center, on November 18 2021; “Approaches and Strategies for India’s scientific cooperation” by Dr. Sanjay K Varshney, Adviser & Head - International Cooperation, DST, “Tale of Tiger” by Mr Daniel Sukumar, Conservationist, Wildlife researcher; “IP protection in publically funded labs: Journey from lab to market - World Intellectual property Day” by Prof. Nitin Tewari, CSIR, NCL, Pune; “Small molecules that restore GABAergic function as potential therapeutics to treat autism spectrum disorder” by Prof. James Chelliah, JNCASR, Bangalore; Mr Nandakumar and so on. The National Science Day was marked by a special lecture “Perfectly Reasonable Approximations: Dealing with the real world” by Prof. Sabyasachi Bhattacharya,

Director, TCG-CREST, Kolkata. Prof. Ashish Lele, Director, CSIR-NCL, gave a special lecture titled “Green hydrogen for green future” on April 6, 2022, wherein he discussed on various aspects of climate change and the impact of it with non-renewable energy sources and the importance of Green hydrogen and its advance in the Indian context. CeNS celebrated National Technology Day on May 11, 2022, Prof. Kota Harinarayana, spoke on the occasion about the challenges and opportunities with respect to security to sustainability in India Aviation. The Biodiversity Day was commemorated on July 1, 2022 by an interesting lecture by Prof. Mewa Singh, University of Mysore who spoke on the topic “What have we learnt from the monkeys around us? A journey of a half-century in the Indian jungles”. On the occasion of Nicola Tesla Day (July 28, 2022), Mr Chetan Pathak, Assistant Vice President- Business Development, spoke about the technology advancements in energy storage solutions & achieving commercial viability with indigenous research & development (R&D).





Name	Affiliation	Title	Occasion	Date
		The theme for 2021 is Intellectual Property and Small & Mid-size Enterprises: Taking your ideas to market. Greenhouse (TBI, Nano Mission Project), CeNS in collaboration with Legasis Services (empanelled IP firms with CeNS. IP Hackathon contest was conducted from 29 April to May 1	World Intellectual Property (IP) Day" celebrated	Apr 29- May 1, 2021
Dr Ganesh T	ATREE Bengaluru	Let the park be green: becoming conscious and proactive to protect our environment	World Environmental Day	Jun 5, 2021
Dr Arun M. Isloor	Professor & Head, Department of Chemistry, NIT-Suratkal, Mangalore	Motivational entrepreneurs for young researchers		June 14, 2021
Prof. S. Sivaram	Honorary Professor and INSA Senior Scientist, IISER Pune	Sustainable Science: Embedding Systems Thinking in Research and Innovation	Teacher's Day	Sep 3, 2021
Prof. Prahlada Ramarao	Padma Shri	India warming up to cold fusion	National Innovation Day (Former President Dr. A.P.J. Abdul Kalam's Birthday	Oct 12, 2021
Dr V. Premnath	Head, NCL Innovations at CSIR-NCL, Founder Director, Venture Center	Science-based deep tech startups: Some learnings and insights from Venture Center		Nov 18, 2021
Dr Sanjay K Varshney	Adviser & Head - International Cooperation, DST	Approaches and Strategies for India's scientific cooperation		Jan 19, 2022

Name	Affiliation	Title	Occasion	Date
Prof. Sabyasachi Bhattacharya	Director, TCG-CREST, Kolkata	Perfectly Reasonable Approximations: Dealing with the real world	Special Lecture on occasion of National Science Day	Feb 28, 2022
Mr Daniel Sukumar	Conservationist, Wildlife researcher	Tale of Tiger	World Wildlife Day	Mar 7, 2022
Prof. Ashish Lele	Director, CSIR_NCL	Creating a vision for a publicly funded R & D institution	Special Lecture	Apr 6, 2022
Prof. Nitin Tewari	CSIR, NCL, Pune	IP protection in publically funded labs: Journey from lab to market	World Intellectual property Day	Apr 26, 2022
Prof. James Chelliah	JNCASR	Small molecules that restore GABAergic function as potential therapeutics to treat autism spectrum disorder	World Autism Day	May 9, 2022
Prof. Kota Harinarayana		Security to Sustainability in India Aviation -Challenges & Opportunities	National Technology Day	May 11, 2022
Mr Nandakumar	Scuba Diver	World beneath the Oceans, their importance and con	World Ocean Day	Jun 13, 2022
Prof Mewa Singh	University of Mysore	What have we learnt from the monkeys around us? A journey of a half-century in the Indian jungles	Biodiversity Day	July 1, 2022
Mr Chetan Pathak	Assistant Vice President-Business Development,	Technology Advancements in Energy Storage Solutions (ESS) & Achieving Commercial Viability with Indigenous Research & Development (R&D)	On Occassion of Nicola Tesla Day	July 28, 2022



A low-angle, upward-looking photograph of a large, mature tree. The trunk and major branches are light-colored and textured, with many smaller branches and dense green foliage filling the upper half of the frame. A bright sun is positioned in the upper center, creating a starburst effect and casting rays of light through the leaves. The lower half of the image is dominated by the thick, gnarled roots of the tree, which spread out across the ground.

Health and Wellness

Awareness sessions, Medical Camps



Vaccination day



International Yoga Day



BP Check Day



International Yoga Day



Everyday is a Yoga Day



Health and Wellness

Awareness sessions, Medical Camps

Good Health – 'Swasthya' is the most essential component in one's life for success. With good health & wellness for all as its goal, CeNS is committed to offering all possible help and support to ensure the well being of all its staff members and in particular, students and researchers, who are the lifeline of an Institution.

The students coming from various parts of the country, leaving the care and attention of their families behind, are provided necessary medical facilities, with a fully functional clinic at the Campus and all necessary arrangements in place to attend to any medical emergency.

Extreme care and preparedness was the key to contain the Covid-19 pandemic. Appropriate Covid related advisories and strict observance of the guidelines of Government helped in minimalistic positive cases reported. Vaccination camps were organized at the Campus for the benefit of all staff, students and their families.

CeNS emphasizes on the essential ingredients for

Swasthya- good balanced diet, exercise and good rest. The Dining facility at CeNS takes all the efforts to see the students and staff get a tasty and balanced meals. The taste buds are also pampered once in a way with tangy snacks and sweets. The requirements of students are given prominence and the students' council helps the dining committee in drawing up a healthy & tasty menu each week. Gym equipment provided in the hostel as well as in the campus helps fitness workouts, and a game of cricket or badminton in the evenings keep the body and mind fit & fine.

Swasthya is not only about diet, exercise and rest. It also goes with 'Jagrukta' – Awareness, which is an integral learning about how to lead healthy lifestyles, maintain good physical health, improve functional abilities and develop the power to recover from illness. It also has important social benefits on educational attainment, economic productivity, social and family relationships, social cohesion and overall quality of life across the entire population.



Physiotherapy



Medical Camp



Eye Screening Camp



Blood Donation Camp



Nutrition Day



Physiotherapy



CeNS organizes Jagrukta programmes that are eye openers and pointers on how to maintain both, physical as well as mental health. Highly accomplished Speakers were invited to advise on the benefits of Yoga, Meditation, Cancer Awareness, Women's Health, Polio Vaccination,

Counseling, good practices in health & hygiene, and so on. CeNS has also conducted Medical Screening Camps, Blood Donation Camp, Vision Screening Camp, Nutrition Week, and many other important events related to Swasthya & Jagrukta.

A close-up photograph of a hand holding a small, glowing incandescent lightbulb. The hand is positioned with the palm facing up, and the fingers are slightly spread. The lightbulb is the central focus, emitting a warm, yellow-orange glow that illuminates the hand and the surrounding area. The background is dark, making the lightbulb stand out. The overall mood is one of inspiration and discovery.

Spread Science

Science outreach programs

Vignettes of the V4 programmes @ CeNS campus



Spread Science

Science outreach program covering high-school and undergraduate students

V4 Programme

This is an outreach activity specifically focussing on spreading science and scientific temper among school and college students, and gets carried out in two modes: inbound and outbound. In the first case, the Centre invites students upto +12 level, for a half-a-day programme that includes a popular scientific talk by a faculty, followed by scientific demonstrations. For degree/post-graduate students, a lab tour is arranged to familiarize them with sophisticated scientific equipment like XRD, TEM/SEM, Raman spectroscopy, UV-VIS spectroscopy etc. which are routinely used techniques in the areas of materials sciences, chemistry, and nanotechnology.

A large number of students from various institutions have actively participated in this program. Under this category, CeNS also hosted a Science talent search event organized by KSTA Karnataka for pre-University college students from all over Karnataka.

The outbound version of the programme is designed considering the logistics to motivate a large pool of students. To name a few institutions where the Centre conducted such events: Shanthinikethan group of Institutions, Ramanagar, RN Shetty PU college-Murdeswar, Krishna University, Machilipatnum, KBN College, Vijayawada, and several colleges in Bengaluru including Bishop Cotton Women's Christain College,





Kindling the young minds

Vijaya College, MES College, MLA College. It is gratifying that during the AKAM period we could interact with more than 900 school/college students under this program.

As a special V4 event, we invited students from Sri Sai Shathashruna Residential School for the Deaf/VTC for the Disabled. Understandably, our lack of skill to communicate with them was expected to be an

impediment for effective dissemination of information. However, our research scholars enthusiastically participated in the event by adapting to the needs and successfully communicated several concepts of science through experiments. It was an emotional and heart-touching moment for CeNSians when the visiting students conveyed their appreciation of the programme using sign language.





Spreading Science to the student community

Spread Science: Science outreach programs

Date	Title	Speaker	Participated Institute
May 15, 2021	The official blog platform of CeNS, hosted on the CeNS website		
July 15, 2021	Nanoscience: The New and Big Science of Small	Dr H S S Ramakrishna Matte	Shanthinikethan group of Institutions
Aug 3, 2021	Nanomaterials for flexible electronics	Prof. B L V Prasad	One day National Webinar on Nano Materials and their Applications. The webinar was organized by the Dept. of Chemistry, Krishna University, Machilipatnum in association with KBN College, Vijayawada
Nov 2, 2021	Students had, visited all the Labs and had interaction with the Researchers and Faculty		University of Agricultural Sciences, Bengaluru
Feb 14, 2022	CeNS Women in Science reach out International Day of Women and Girls in Science	Dr Neena John, Dr Kavita Pandey and Researchers Ms Athira M, Trupathi Devaiah C and Nurjahan Khatun	Bishop Cotton Womens Christain College, Vijaya College, MES College, MLA College
Feb 25, 2022	"Let Us Learn To Lead" "Nanoscience in Materials Research" "Nanolithography"	Prof B L V Prasad Dr Pralay Santra Dr Angappane	RN Shetty PU college, Murdeshwar
Mar 18, 2022	Liquid Crystals: A unique state of matter	Dr Yelamaggad	Soundarya Composite PU College
Mar 24, 2022	Let us learn to lead	Prof. B L V Prasad	NMKRV college for Women
May 20, 2022	Synthesis and utilization of nanomaterials for printing and drug-delivery applications with a special emphasis on gold nanoparticles	Prof. B L V Prasad	VFSTR Successfully Conducted a Fifteen-day Refreshers' Course in Chemistry in Association with Indian Science Academies
May 28, 2022	Smart Windows	Dr Ashutosh K Singh	Basaveshwara PU College
Jul 9, 2022	State of Matter	Dr Yelamaggad	RNS PU college
Jul 18, 2022	Virtual talk Science Talent Search Program" organized by, Karnataka Science and Technology Academy (KSTA), Department of Science and Technology, Government of Karnataka	Dr Yelamaggad	
Jul 28, 2022	A Glimpse of Soft matter	Dr Geetha G Nair	St. Philomenas College, Mysore
Jul 30, 2022	NanoScience: A new and Big Science of small	Dr H S S R Matte	Kalpatharu College, Tiptur



Research Outreach Initiative Students

Name	Affiliation	Research title
Aalekhya Saha	IIT- Guwahati	Thin film deposition Nickel oxide by direct spray
Avani Anil Kumar	Amrita Vishwa Vidyapeetham, Kollam	Synthesis of Nickel based materials for electrocatalytic application in Urea oxidation
Basharat Ramzan Gojri	Karnataka University, Dharwad	Synthesis of Transition Metal Oxides, Oxyhydroxides and Sulfides for Electrochemical Applications
Fuad Seneen K	University of Calicut, Malappuram	Liquid crystal trimers showing ESIPT
Harshitha M	Bangalore University, Bengaluru	Cation migration of 2D & 3D perovskite
Adarsh	CUSAT, Kochi	Fabrication and characterization of self-standing polymer dispersed liquid crystal films
Mahammed Suleman Patel	NIT, Tiruchirappalli	Multi-Step Nanoparticle Synthesis and Nanostructure Fabrication: Chemical Reduction, Sol-Gel, and Colloidal Lithography Approaches
Priyanka	Maharishi Dayanand Sagar University, Rohtak	Development of efficient and stable cathode materials for next generation Aluminium batteries
Tanu Verma	Reva University, Yelahanka, Bengaluru	Resistive switching of heterojunction thin film of LSMO and STO
Vinaya Krishna	Kannur University, Kannur	Inclusion of nanoparticle in blue- Phase liquid crystals- Synthesis, self-assembly and stabilization of Topological defects.

Research Outreach Initiative:

The program is aimed to provide first-hand experience in front-line research to highly motivated students pursuing bachelor's/post-graduate courses in Physics/ Chemistry/ Materials Science/Engineering. The visiting student gets to spend typically three months under the program. In exceptionally good contribution by the

student an extension of the duration is provided. The fact that most of the ROI Alumni students are pursuing PhDs in premier institutions of India and elsewhere, speaks for the success of the programme. During the AKAM period, despite the pandemic situation, 9 ROI students benefitted from this programme.



A photograph showing several hands of different skin tones stacked together on the rough bark of a large tree trunk. The background is a lush green forest with sunlight filtering through the leaves. A semi-transparent dark rectangle is overlaid on the lower left, containing the text "Bonding Together".

Bonding Together



The highlight of the bonding initiative is the annual mouth-watering Food Fiesta – 'Kai Tuttu,' where many from the CeNS community and families prepare a variety of dishes, mostly specialties in their regions, and everyone gets a taste of each regional delicacy. The best dish is chosen on votes. More than the competition, the spirit of 'know each other better' is most evident in this fiesta.



A batch of 75 students from three different schools Govt. Higher Secondary School, Hullegowdanahall , Govt. Higher Secondary School, Ravuthanahalli & Shree Chennakeshava High School, Sondekoppa were invited to the Campus on the occasion of the 'Har Ghar Taranga' during the 75th Independence Year for demonstration of science experiments by our students and researchers. The school children made a formation of the number 75 at the Amphitheatre, waving the Indian Flag, to commemorate the occasion.





Bonding Together

CeNS has a vibrant and a diverse range of cultures, with students panning from Kashmir to Kerala and from Gujarat to West Bengal, mingling into one CeNS family. The bonding of these varied cultures is showcased at our Cultural Fiesta 'Rashtrotsav', when the Amphitheatre reverberates with the beauty of a Malayalam Ghazal, the finesse of a Hindi poem, complemented by Robindro Sangeet of Bengal, an energetic Lavani from Maharashtra and enlightened by a Bharatnatyam ensemble from the South, flowing onto the catchy beats of Bollywood.

The staff and students wholeheartedly take part in the festivities and spread the flavours of India through these fine art forms. Colourful events also mark the State's Rajyotsava, where one would find Kannadigas as well as from other parts, enthusiastically joining hands to celebrate Kannada in all fervor. The Official Language Hindi is also celebrated through interesting events held during a week long programme, Hindi Pakhwa. Songs, Essay, Poems, Word Games, Anthakshari, Talks, etc., are conducted.

CeNS community extends its bonding initiatives to families and friends by inviting their participation in Sports Day, Walkathon, Cyclathon, Amrit Vaakya, Painting challenge, Photography, Essay Writing, Poetry, etc. Each of the events had overwhelming participation of family members of staff & students.



Another notable event was the Cyclathon of 10 kms., which was organized on Independence Day in which, the participation of staff and students was enthusiastic. Even the senior most member of the CeNS family, nearly 80, covered the distance!





Title	Occasion	Date
An AmritVaakya (or Slogan) contest		Apr 16-17, 2021
Planting a sapling by Prof G U Kulkarni, Director-in-Charge	World Environmental Day	Jun 5, 2021
Green energy and green building	Painting challenge	July 19-23, 2021
All staff & faculty wore Handloom clothes	National Handloom Day	Aug 6, 2021
A Walkathon was organized as a part of "Fit India Freedom Run 2.0"	75th Independence Day	Aug 15, 2021
'Kala Fiesta-		Aug 18, 2021
Hindi Pakhwada		Sep14-30, 2021
Know your Alumni		Oct 29, 2021
Essay Competition	National Girl Child Day	Jan 21, 2022
Photography competition		Feb 2, 2022
Poetry Competition	World {Poetry Day	Mar 16-24, 2022
Feliciation to Dr Geetha G Nair by Prof Ashok K Ganguli		Apr 1, 2022
Rashtrotsava- a multicultural programme		Apr 29, 2022
Khadi stall		Apr 20, 2022
Employee Appreciation Day		May 12, 2022
Rakshabandhan Day		Aug 11, 2022
Har Ghar Tiranga		Aug 12, 2022
Sports Day		Aug 12, 2022
Cyclathon	76th Independence Day	Aug 15, 2022

Rakshabandhan



Talent show by CeNSians



Women Empowerment



Rashtrotsava





Independence Day Celebrations



Planting of Ashoka Tree



Constitution Day Celebrations



Vigilance Awareness



Rakshabandhan



Hindi Diwas





Handloom Day



Hindi Pakhwara



Cultural Events



Cultural Events



Cultural Events



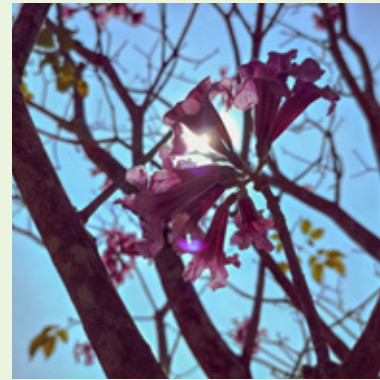
Cultural Events

Employee Appreciation Day



Swachata Pakhwara





CeNS - The Wonderland





AKAM Commitee



Prof. B L V Prasad
Chairman



Dr. S Angappane
Co-ordinator



Dr. S Krishna Prasad
Member



Dr. Geetha G Nair
Member



Dr. D S Shankar Rao
Member



Mr. Subodh M Gulvady
Member



Mr. Deepak S
Member



Dr. Nayana J
Member



