

# STRIDES

Science, Technology, Research, Innovation & DEvelopments

BRINGS NEWS ON S&T DEVELOPMENT FROM DST SUPPORT AND BEYOND

## EDITORIAL

Indian scientists have often in the past left impactful footprints in the global arena of science and technology. This record of Indian scientists holds immense potential for the country's imminent path towards global leadership. The six day visit of the Union Minister of State (Independent Charge) Ministry of Science and Technology; Minister of State (Independent Charge) Ministry of Earth Science; MoS PMO, Ministry of Personnel, Public Grievances, Pensions, Space and Atomic Energy, Dr Jitendra Singh assumes importance in the path to realize this potential.

The time is also significant not only because it is happening for the first time after the new Government headed by Prime Minister Rishi Sunak took over in the United Kingdom, but also because it took place subsequent to the launch of Missions like the National Quantum Mission and also in the year of India's G20 Presidency.

The visit in which the Union Minister met top scientists and scientific administrators of the country and stopped at academic institutions Satellite Applications Catapult, Rutherford Appleton Labs and Science Museum, opens up possibilities of collaborations in quantum science and technology, space, energy, green hydrogen and other scientific areas of priority for both the countries.

This visit could pave the way for the vision of 'Vasudhaiva Kutumbakam' and could be a milestone in the path of making India a global leader in science and technology, beaconing new beginnings for the developing world.

—DR AKHILESH GUPTA, EDITOR-IN-CHIEF

## COVER STORY

### Cabinet approves National Quantum Mission to scale-up scientific & industrial R&D for quantum technologies

National Quantum Mission received cabinet approval at a total cost of Rs. 6003.65 crores, to scale up scientific and industrial R&D, for accelerating Quantum Technology-led economic growth and leverage India into a leading nation in the area

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### Union Minister Dr Jitendra Singh announces special drive for promoting StartUps and R&D activities in new and emerging areas in the universities of NE, J&K

The Union Minister launched a new scheme, SUPREME, a first-of-its-kind program by the Government of India, to provide financial support for repair/ upgradation/ maintenance/ retrofitting or acquiring additional attachments to increase functional capabilities of existing analytical instrumentation facilities (AIFs) during the programme.

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Editorial

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Towards Quantum Jump



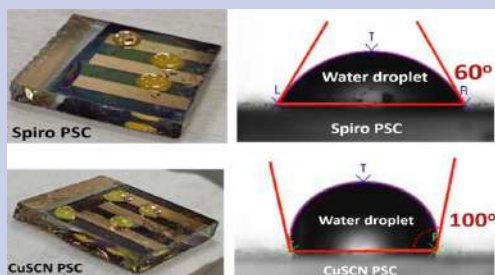
# POPULAR SCIENCE STORIES



## NM-ICPS Mission can accelerate technology translation and commercialization through TIHS spanning all over the country- Experts

Experts deliberated on ways to strengthen the NM-ICPS with the help of disruptive technologies, effective translation, and commercialization of technologies so that it can become a major driver of economic growth of the country at the National Workshop on Technology Innovation in Cyber-Physical Systems (TIPS).

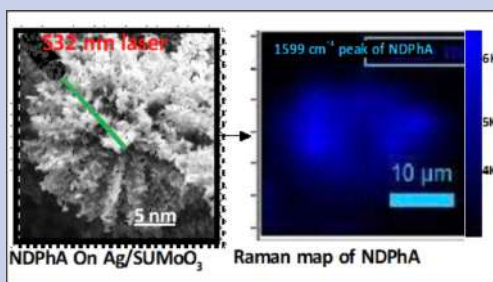
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## Perovskite Solar Cells with enhanced stability fabricated using inorganic material

Perovskite solar cells (PSCs) with increased stability have been fabricated with the help of the inorganic hole transporting material copper thiocyanate (CuSCN).

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## New low-cost substrates can enhance sensitivity of analytical tools for detecting toxic pollutants

Scientists have developed a new low-cost substrate that can increase the sensitivity of Surface-enhanced Raman spectroscopy (SERS) -- a vital analytical and sensing tool for detecting molecules.

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## Grassroots Innovations Accelerator program announced to support grassroots innovators with entrepreneurial, product & market development

A Grassroots Innovations Accelerator program has been announced at the ongoing Festival of Innovation and Entrepreneurship (FINE) 2023, organised at the Rashtrapati Bhavan, to help grassroots innovators in farming with support for entrepreneurial, product, and market development.

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## Best practices & policy models of G20 nations for sustainable energy

## transition discussed at G20 Research Innovation & Initiative Gathering Conference

Experts deliberated on best practices and policy models of G20 nations for sustainable energy transition at the G20 Research Innovation and Initiative Gathering (RIIG) Conference on Eco-Innovations for Energy Transition organised at Dharamshala, Himachal Pradesh.

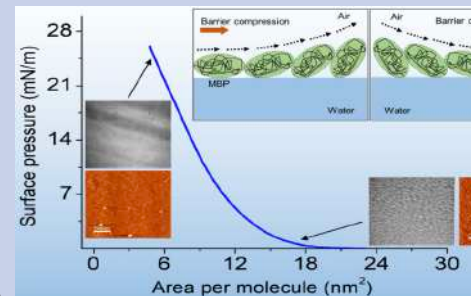
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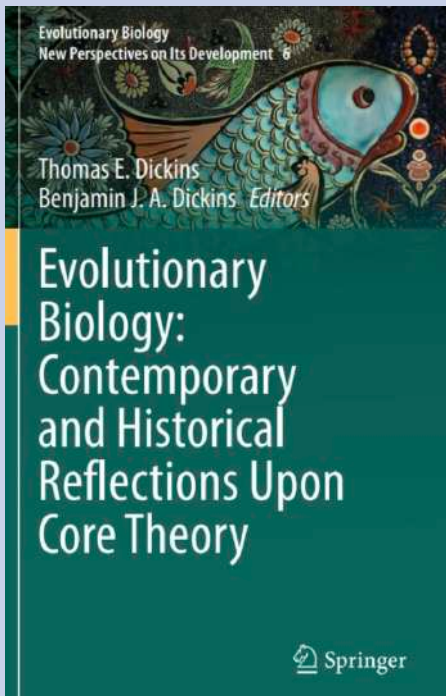


## Scientists fabricate protein that can help study diseases like multiple sclerosis

Scientists have fabricated monolayers of pure myelin basic protein (MBP), a major protein component of myelin sheath, which is a protective membrane that wraps around the axon of nerve cells and acts as a model protein in studying diseases like multiple sclerosis (MS).

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## Indian biologists put forward novel refinements to fundamental conceptual principles of evolutionary biology

Indian scientists have presented a number of novel technical, historical, and philosophical refinements to core concepts in how we understand evolutionary biology and its development in the recent edited volume *Evolutionary Biology: Contemporary and Historical Reflections upon Core Theory*.

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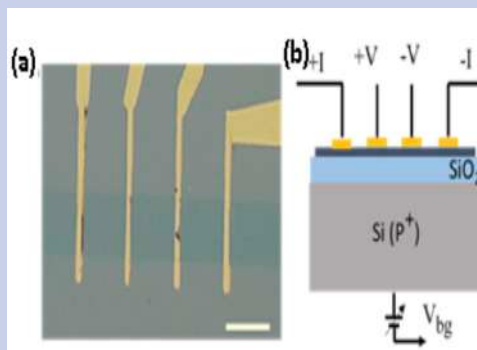


## A puzzling tale of distant galaxy GN-z11: the vanishing and reappearing dust veil

The latest spectroscopic results from

GN-z11 -- identified as one of the distant and early galaxies-- has confirmed a complete absence of dust particles from its surroundings for an interim time period despite possessing a very high star formation rate.

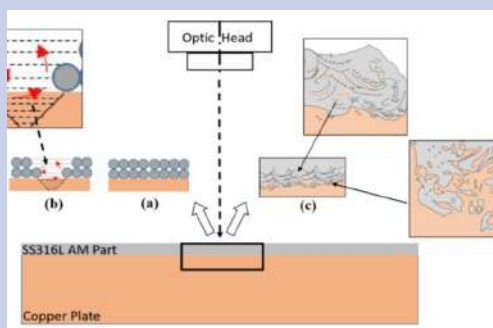
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## Weaning information from fluctuations in electrical resistance in a graphene sheet can help in designing low noise electronic transistors

Scientists have fabricated an experimental field effect transistor (transistor that uses an electric field to control the flow of current in a semiconductor) that can measure its own defects by extracting information from fluctuations in electrical resistance in a graphene sheet.

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## Novel bi-metallic joining process can create a composite from copper and steel for engineering applications which need high thermal & electrical conductivity

Researchers have developed a novel bi-metallic joining process to create a bimetallic composite made from copper and steel, which has high thermal and electrical conductivity for engineering applications, such as heat exchangers, hydraulic pump components, cooling staves, guide plates, and hot-work tooling applications.

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## NEW INITIATIVES

▶ DST-RSF joint call 2023

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▶ DST-NWO Joint Indo-Dutch call on Water Disaster management

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▶ India-Republic of Korea Joint Call for Research Proposals

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▶ 10th India-Israel Industrial R&D and Technological Innovation Fund (I4F)

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# TOWARDS QUANTUM JUMP

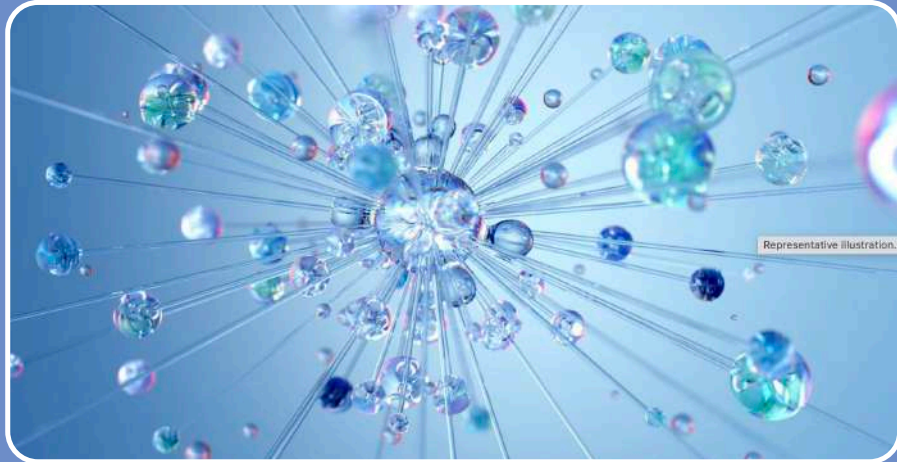


## India ready to take the lead in Quantum tech

With the National Quantum Mission announcement, India is on the global quantum map. It is expected to be a dedicated mission towards use-case development and applications that will boost the efforts of QuEST and NM-ICPS quantum mission and take India a step closer towards achieving quantum readiness and hence also leadership in future, writes Union Minister for S&T Dr Jitendra Singh in HT

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## What will India's new National Quantum Mission achieve?



## UNION MINISTER DR JITENDRA SINGH ON A 6-DAY VISIT TO LONDON WHERE HE HELD SERIES OF MEETINGS WITH THE COUNTERPART BRITISH MINISTERS, INDIAN DIASPORA, STARTUPS AND ACADEMICIANS



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