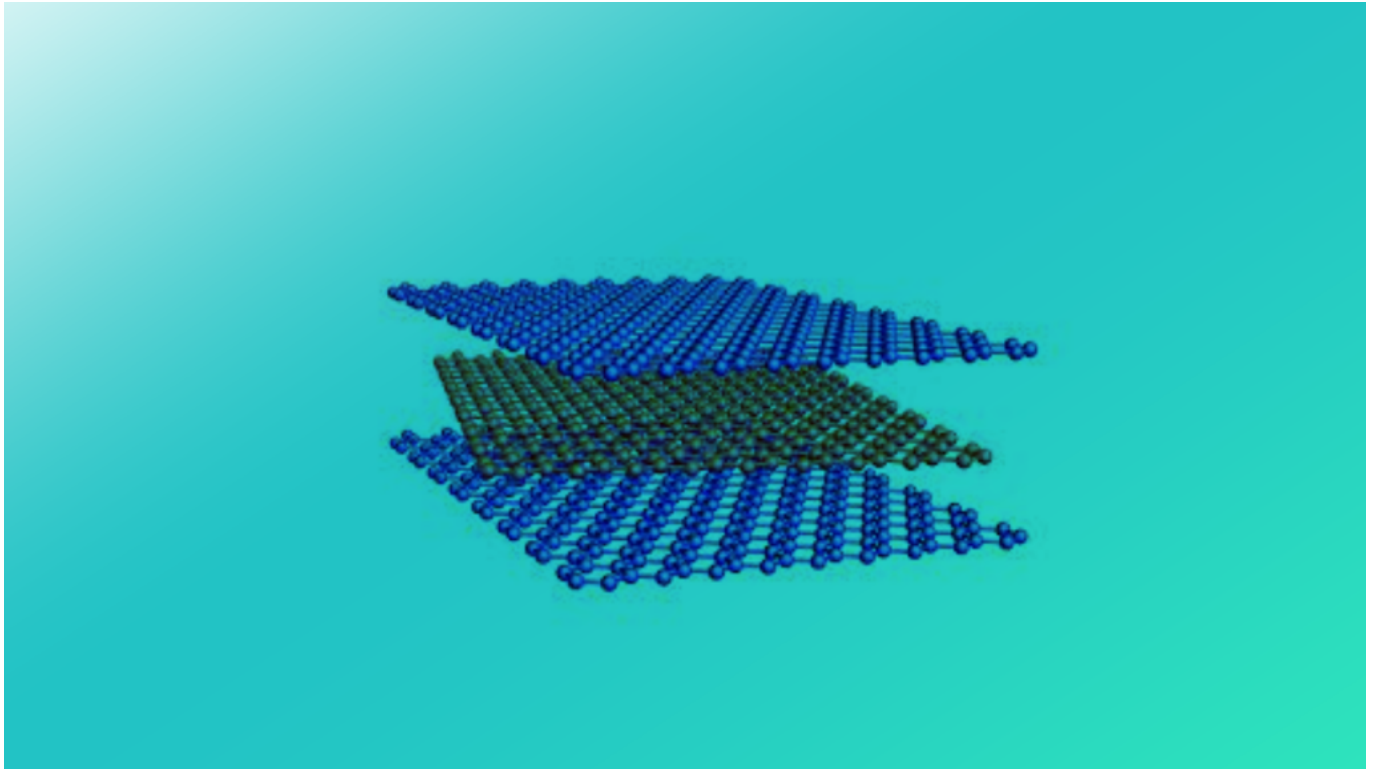


# Graphene-Aurora Program

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**Context-** Recently, the Graphene-Aurora program was launched at the Maker's Village in Kochi, Kerala.

## Graphene Aurora Program

- **Information:**

- This program is implemented by the Digital University of Kerala, co-funded by the Ministry of Electronics and Information Technology (MeitY), Government of India.

- **Purpose:**

- By stimulating research and promoting commercialization, the program emphasizes cutting-edge graphene technology to help India establish a strong position in the global market for new materials.
- The proposed project, which aims to increase production of the valuable carbon allotrope, marks a new chapter of innovation in the technological sector of the country.

## India Graphene Engineering and Innovation Center (I-GEIC):

- A non-profit organization named "India Graphene Engineering and Innovation Center (I-GEIC)" will be created for the needs of the project.

## About graphene

- Graphene is often called a wonder material because of its extraordinary electrical and electronic properties.
- It was discovered in 2004 by Andre Geim and Konstantin Novoselov, who received the Nobel Prize in Physics in 2010.
- It is stronger than steel, highly stretchable and can be used as a flexible conductor.
- Its thermal conductivity is much higher than that of silver.
- Graphene has several properties that make it interesting for many different applications.
- Finally, it is a thin, mechanically very strong, transparent and flexible wire.
- It can be used in applications such as touch screens, light panels and solar cells.

## Applications of Graphene

- **Biomedicine:** Better brain penetration, DIY health test kits, targeted drug delivery, “smart” implants and DIY health tests.
- **Composites and Coatings:** Combining graphene with already existing products to create so-called composite materials is one of the easiest and most effective methods to take advantage of graphene’s promise.
- **Electronics:** Graphene has the potential to develop future electronics that today can only be found in science fiction. Advanced semiconductors, foldable phones and other electronics with faster transistors.
- **Battery:** Graphene can significantly extend the life of a traditional lithium-ion battery, enabling faster charging and longer-lasting electronics.
- **Graphene films:** When gases and liquids are involved, graphene oxide films can create an impeccably tight seal.
  - They are exceptionally good at removing water from the gas mixture and effectively separating the organic solvent from the water.
- **Sensors:** Highly sensitive graphene sensors can detect small harmful particles and protect potentially dangerous environments.
- **Other applications:** This includes anti-corrosion paints and coatings, accurate and fast sensors, fast and efficient electronics, flexible displays, rapid DNA sequencing, drug delivery and more.