

## Nobel Prize for Chemistry

On October 4, 2023 the Nobel Prize winner's announcement started. On December 10 prizes will be distributed.

### Winners:

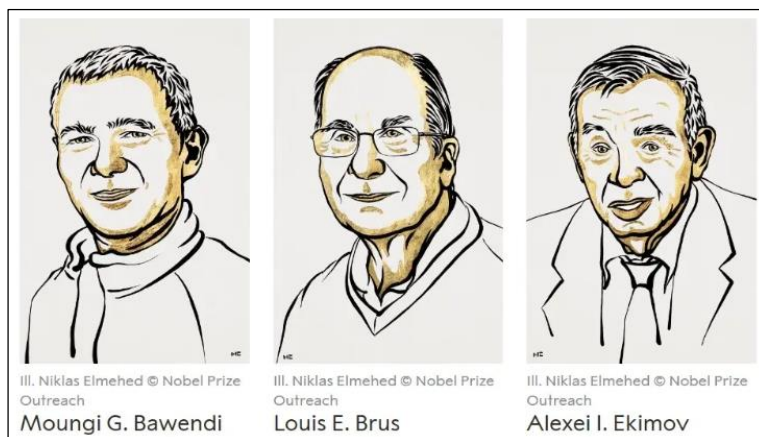
- **Moungi G. Bawendi** - USA
- **Louis E. Brus** - USA
- **Alexei I. Ekimov** - USA

### Awarded for:

“For the discovery and synthesis of **quantum dots**”

### Announced by:

The Royal Swedish Academy of Science



### Cash prize:

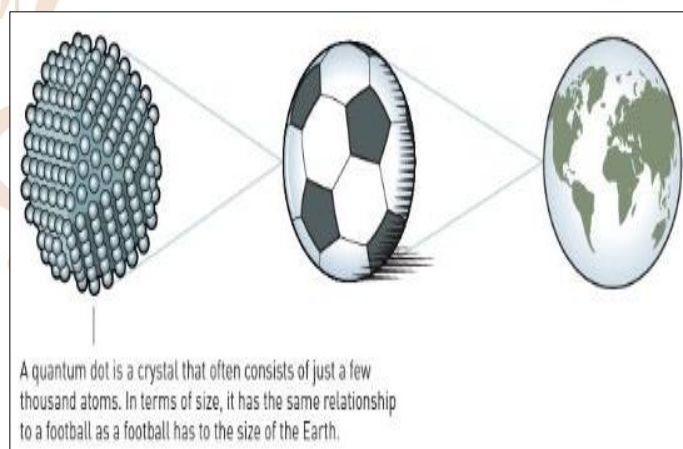
11 million Swedish kronor (approximately Rs. **8.33 crore**)

### About Quantum Dots:

Nanoparticles so tiny that their size determines their properties. Quantum dots are crystals, a few nanometers wide, holding only a few thousand atoms.

### Contributions of Ekimov & Brus:

- In the 1980s – synthesised 1<sup>st</sup> **quantum dots** in glass & liquid respectively.
- Proving the existence of such crystals & confirming their ability to **fluoresce light** of different colours based on their **size**.



### Contributions of Moungi G. Bawendi:

- Revolutionized the methods for manufacturing quantum dots, making their **quality extremely high** – a vital prerequisite for their use in today's nanotechnology.

### Significance:

- Illuminate computer monitors, LED lamps & television screens based on **QLED technology**
- Illuminate **tumor tissue** for a surgeon.
- In the future contributed can contribute to **flexible electronics, miniscule sensors, slimmer solar cells** and perhaps **encrypted quantum communication**.
- Biochemists and doctors use them to map biological tissue.

