

India Photonics Association (IPA)

Prelims: Current events of national and international importance | Government Policies & Interventions

Why in News?

India has established the **India Photonics Association (IPA)**, which is described as the country's **first independent, ecosystem-led photonics industry body**.



SHANKAR
IAS PARLIAMENT

Light-Driven
Innovation
for a Brighter India



IPA
INDIA PHOTONICS
ASSOCIATION

Harnessing the Power of Light
for a Viksit Bharat

India Photonics Association (IPA)

Key Facts

 Name	India Photonics Association (IPA)
 Launched	9 September 2026
 Nature	Independent, ecosystem-led industry body
 Focus	Photonics industry & ecosystem
 Role	Neutral platform for collaboration
 Key objective	Innovation + industry collaboration + policy inputs
 Coverage	End-to-end photonics ecosystem



Innovation
for a New India



Industry
Collaboration



Policy Support
for Growth



End-to-End
Ecosystem Development

From Light
to a Brighter Tomorrow



- **Aim** - To promote innovation, industry collaboration, knowledge-sharing and policymaking in India's growing photonics sector.
- **Photonics** - It refers to the science and technology involved in generating, controlling, and utilizing light (photons).
- It encompasses the use of **light to transmit, process, or detect information and energy**.
- It enables high-speed, high-bandwidth, and low-loss data transmission.
- **Distinction Between Electronics and Photonics**
 - Electronics relies on the movement of electrons, or electric current, within semiconductor materials such as silicon.
 - Photonics utilizes light, specifically photons, transmitted through optical fibers,

lasers, optical chips, and sensors.

- Photonics plays a critical role in the following areas:
 - Optical fiber communication
 - Data centers
 - Laser technology
 - Satellite communications
 - Medical equipment and devices
 - Sensor technologies
 - Semiconductor technologies
 - Emerging technologies such as artificial intelligence and quantum computing.
- **Market Potential** - Recent industry reports indicate the following:
 - The Indian photonics market is estimated to reach **USD 78.4 billion by 2025**.
 - It is projected to grow to **USD 155 billion by 2034**.
 - Silicon photonics is expected to experience a compound annual growth rate (CAGR) of approximately 29 percent.
- **Significance**
- **Digital Economy** - Photonics enhances India's data and communication infrastructure.
- **Semiconductors** - Silicon photonics integrates optical technologies with the semiconductor ecosystem.
- **Strategic Technologies** - Photonics applications span space, telecommunications, defense, healthcare, data centers, and supply chains.
- **Policy Input** - The industry body provides policymakers with technical expertise.

Reference

[The Hindu | India Photonics Association \(IPA\)](#)

