



UNIVERSITY OF KERALA

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PRESS RELEASE

University of Kerala Secures Patent for Breakthrough in Light-Emitting Materials

The University of Kerala has achieved a major milestone in scientific innovation with the granting of a patent for a pioneering invention by Professor Sam Solomon, Head of the Department of Optoelectronics, and his Ph.D. student Miss DivyaVijayan.

The duo has developed a novel light-emitting material capable of producing a full spectrum of colours — including blue, green, yellow, red, and even white light — from a single host material. This marks a significant departure from conventional lighting technologies, which typically require multiple materials to generate white light. By harnessing precise compositional control within one material system, the invention enables seamless colour tuning and efficient white light emission.

At the heart of this breakthrough is a cuspidine-structured rare-earth gallate, a material never before used as a phosphor host. This innovation not only establishes a new scientific platform but also opens the door to next-generation lighting technologies.

The newly developed phosphor material promises:

- Superior colour quality for lighting and display applications
- Enhanced efficiency that reduces energy consumption
- Extended operational lifetime compared to widely used commercial phosphors

The potential applications are vast, ranging from energy-efficient LED lighting and advanced display technologies to security and forensic tools, medical imaging, and optoelectronic devices.

Speaking about the invention, Professor Solomon remarked: “By introducing cuspidine-structured rare-earth gallate as a phosphor host, we have created a new pathway for innovation in lighting and optoelectronics. This invention is not just about better performance — it’s about redefining the possibilities of light itself.”

Adding to the significance of this achievement, the University of Kerala established a Translational Research and Incubation Centre in 2023. A policy change enabled the University’s Patent Cell to work in tandem with this centre, which now serves as a liaison office for patent processing. This strategic move has already borne fruit: the University has secured over 24 patents in the last three years, underscoring its emergence as a hub for cutting-edge research and innovation.

With this patent, the University of Kerala strengthens its role in advancing sustainable technologies and reaffirms its position as a leader in scientific discovery and innovation.



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