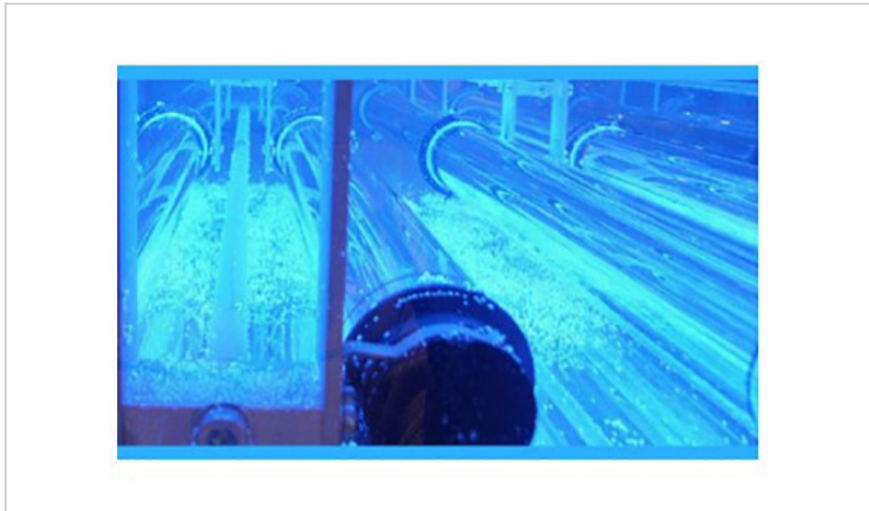


UV-Transparent Conducting Films, Optical Stack and Methods of Making

ID# 2020-5078



PennState



UV Water disinfection

Technology Summary

This scalable process grows optically transparent thin films from a certain class of materials with a superior transmission in the UV range and an optical conductivity two orders of magnitude higher than doped gallium oxide, the current best UV transparent conductor. Results demonstrate the tunability of the transmission window without sacrificing the high conductivity. The invention's films allow for large volume, high-throughput production employing existing chemical and physical deposition techniques and equipment. The inventors envision that these low-cost manufacturing tools employed for ITO shall produce reliable and reproducible products comprising the subject films having a ninety percent reduction in thin thickness of 10-60 nm resulting in increased production rates and optical transparency.

Application & Market Utility

The inventors believe that the invention has commercial value as an electrical component of a LED that emits UV having utility for disinfection/sterilization. Industrial applications may include polymer curing, stereolithography and 3D and resin printing, particle/gas detection, counterfeit detection, high-density optical recording, plant growth lighting for horticulture and the optoelectronic devices referenced above.

Next Steps

Sample Evaluation

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- Ultraviolet (UV) light (100-400 nm)
- Light-emitting diode (LED)
- UV Phototherapy
- Polymer Curing
- Photovoltaic Device

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