

FRANK SHI's Group at UC Irvine: Current Research Activities

www.eng.uci.edu/faculty_research/profile/fgshi

Optoelectronic Devices & Materials

- *Photonic glass with strong gamma radiation resistance*
- *Photonic glass for broadband fiber lasers & sensors*
- *Nano-composites for printable devices*
- *Fiber-optic sensors*
- *Nucleation, phase transformations & other materials processing fundamentals*

Optoelectronic Device Packaging Materials

- *Epoxy/silicone polymers for LED & solar cell device encapsulation*
- *Conductive and dielectric polymer-metal composites for chip bonding*
- *Conductive pastes for solar cells*
- *Composite materials design modeling*

White LED Technologies

- *Phosphors materials processing*
- *Phosphor for LED lighting*
- *Phosphors for LED-BLU for LCDs*
- *Simulations for optical design*
- *Simulations for thermal design*

High Power LED Packaging

- *Novel packaging materials*
- *Novel light extraction technologies*
- *New package designs*
- *Optical, thermal and mechanical modeling and simulations*

Optoelectronic Medical Devices & Packaging

- *Dental devices*
- *Blood composition sensors*
- *Medical stents and materials*