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