Research achievements

1. Designed and developed the first completely indigenous photothermal imager that operates over 1 Hz to 110 kHz pump modulation.

2. Designed and developed a completely automated dip coating unit for sol-gel thin film preparation.

Publications

1. An automated optical scanner for photoacoustic imaging of solid samples
   K. Sreekumar & J. Philip, Advances in Instrumentation
   (New Age International, New-Delhi), 1st Edn, 1996, p.816

2. Dual phase wide band lock-in amplifier for linear and non-linear photothermal signal processing

3. Studies on the properties of dip-coated ITO films considering substrate vibration

4. Observation of illumination area dependent photothermal hysteresis in some solids
   K. Sreekumar & V K Vaidyan (under revision)

5. Some features of area dependent photothermal hysteresis in solids
   K Sreekumar & V K Vaidyan (communicated)

6. Simple Diffusion Wave Analyzer
   K Sreekumar (communicated)

7. Virtual defects in photothermal imaging—a consequence of area dependent hysteresis
   K Sreekumar & V K Vaidyan (communicated)

   K Sreekumar & V K Vaidyan (communicated)

9. Error analysis of photothermal scanning liquid effusivity meter
   (Under preparation)
10 A computer controlled sol-gel dip coater for the preparation of solid thin films
K. Sreekumar, D. Sumangaladevi Amma & V. K. Vaidyan
Proceedings of the national symposium on instrumentation (NSI-27), Coimbatore (November, 2002)

11 A compact 50mW pulsed/cw diode laser unit with automatic power control
K. Sreekumar
Proceedings of the 28th national conference of optical society of india
(New Delhi, January, 2003)

12 Imaging of subsurface corrosion in painted samples by laser photothermal scanning microscopy
K. Sreekumar & V. K. Vaidyan

13 Thermo-electronic imaging of contamination in microelectronic wafers using laser photothermal radiometry
K. Sreekumar, V S Lavanya & V. K. Vaidyan
18th National symposium on plasma science and technology (Pilani, December, 2003)

14 Lifetime Mapping of Ion Implanted Si Wafers by 3-Dimensional Laser Photothermal Radiometry
K Sreekumar, Fourth DAE-BRNS National Laser Symposium (NLS-4), BARC, Mumbai, 2005