Abstracts

Non-Perturbed Photoluminescent Thermometry (PLT) Suitable for Microwave Hyperthermia in Cancer Patients

P.N. Shrivastava and T.V. Samulski. "Non-Perturbed Photoluminescent Thermometry (PLT) Suitable for Microwave Hyperthermia in Cancer Patients." 1983 MTT-S International Microwave Symposium Digest 83.1 (1983 [MWSYM]): 195-197.

A new concept of Photoluminescent Thermometry (PLT) for non-perturbing measurement of temperature in the presence of electromagnetic fields is presented. PL spectroscopic studies demonstrate CaS(Eu,Sn) phosphors to have optimum properties for a hyperthermia probe. Several PLT probes have been constructed and tested to demonstrate that real-time temperature as measured with these probes remain unperturbed in microwave fields at power densities >325 mW/cm2. Temperature resolution of 0.1 degree C has been achieved in the range of 37-47 degrees C and the calibration stability over periods of months is found excellent for use invivo during hyperthermia treatment.

❑ Return to main document.