

Sol-Gel Neutron Detector

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Co-doping of various inorganic or organic scintillator dyes along with neutron absorbers [^6Li and ^{10}B] and rare-earth activators was possible in our study by room-temperature sol-gel process and combinational sol-gel synthesis. Loadings of ^6Li and ^{10}B or scintillator dyes as high as 50% have been achieved. The sol-gel glasses were made in the forms of crack-free films, disks and fibers. Scintillating properties of such transparent lithiated sol-gels doped with organic fluorescence-sensitizing agent 2,5-diphenyloxazole (PPO) and activator 1,4-bis-2-(5-phenyloxazolyl)-benzene (POPOP) will be discussed.

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