Temperature Dependencies of Linewidths, Positions, and Line Shifts of Spectral Transitions of Trivalent Neodymium Ions in Ceramic Nd3+:Y2O3  
FRANCISCO PEDRAZA, EDWARD KHACHATRYAN, ROBERT DENNIS, KELLY NASH, DHIRAJ SARDAR, The University of Texas at San Antonio — Effects of temperature on widths and shifts of the spectral lines of Nd3+ in Y2O3 polycrystalline ceramic have been investigated. The spectral lines corresponding to the inter-Stark transitions R1 → Y1 (1074 nm) and R1 → X3 (914 nm) within the 4F3/2 → 4I11/2 and 4F3/2 → 4I9/2 transitions, respectively, have been studied. The widths of these lines and their shifts have been measured as a function of temperature in 10K-300K range. The spectral linewidths of both transitions are found to increase with increasing temperature. This research was supported by the National Science Foundation Grant No. DMR-0934218.

Francisco Pedraza  
The University of Texas at San Antonio

Date submitted: 27 Sep 2010

Electronic form version 1.4