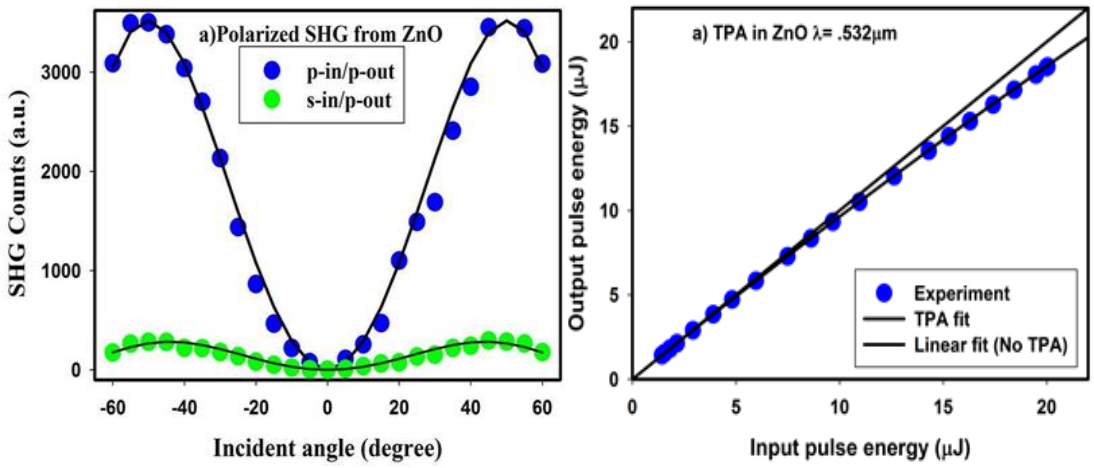
Physics Journal Club Meeting

Nonlinear Optical Properties of Aluminum Doped Zinc Oxide

Otieno C. Odhiambo

Zinc oxide (ZnO) is a thoroughly studied wide-bandgap semiconductor possessing excellent optical and electronic properties at room temperature. A renewed interest in this material has been generated as a result of enhanced nonlinear optical (NLO) responses induced by doping. We investigate the NLO properties of Al-doped ZnO (AZO) under picosecond excitations over a range of wavelengths. Second and third-order NLO susceptibilities were characterized by Maker fringe measurements and the results were used to generate broadband dispersion. We also present a systematic study of nonlinear refractive index (NLR) n_2 and two-photon absorption (TPA) β.



1. Cao, H., Wu, J.Y., Ong, H.C., Dai, J.Y. and Chang, R.P., " Second harmonic generation in laser ablated zinc oxide thin films". Appl. Phys. Lett., **73** 5 (1998).

2. Larciprete, M.C., Passeri, D., Michelotti, F., Paoloni, S., Sibilia, C., Bertolotti, M., Belardini, A., Sarto, F., Somma, F. and Mastro, S.L., 2005. "Second order nonlinear optical properties of zinc oxide films deposited by low temperature dual ion beam sputtering." J. Appl. Phys.**97** 2 (2005) .

Friday, November 18, 2016
Science II Room 144
Pizza @ Noon
Presentation @ 12:15
There will be a sign-in sheet for all attendees to sign.