

Abstract Submitted  
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**Electron Distributions in Hexagonal Selenium and Tellurium and Monoclinic Selenium with Dilute Impurities and Associated Nuclear Quadrupole Interactions\***. N.B. MAHARJAN, D.D. PAUDYAL, D.R. MISHRA, S. BYAHUT, M.M. ARYAL, Tribhuvan University, Kirtipur, Kathmandu, Nepal, HWA-SUCK CHO, Yeung-Nam University, Taegu, S. Korea, R.H. SCHEICHER, Michigan Technological University, Houghton, LEE CHOW, University of Central Florida, Orlando, JUNHO JEONG, T.P. DAS\*\*, State University of New York at Albany — The electron structures of Selenium chains and rings with Te impurities in hexagonal and monoclinic structures respectively and Se impurities in Te chains in hexagonal lattice have been studied using Hartree-Fock cluster model including many-body effects, including lattice relaxation effects. The calculated electronic wave-functions are utilized to obtain  $^{77}\text{Se}$  and  $^{125}\text{Te}$  nuclear quadrupole coupling constants  $e^2qQ$  and asymmetry parameters  $\eta$  and compared with available experimental data from Mossbauer and perturbed angular correlation measurements. From our results, the expected nature of nuclear quadrupole interactions associated with Sb impurities will be discussed. \*Supported by NSF US-Nepal Program and UGC Nepal \*\*Also at UCF, Orlando

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