

Abstract Submitted  
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**Constrained Hartree-Fock Theory and Study of Deformed Structures of Closed Shell Nuclei**<sup>1</sup> CHOUDHURY PRAHARAJ, Institute of Physics, Bhubaneswar 751005, India — We have studied some  $N$  or  $Z = 50$  nuclei in a microscopic model with effective interaction in a reasonably large shell model space. Excitation of particles across 50 shell closure leads to well-deformed excited prolate configurations. The potential energy surfaces of nuclei are studied using Hartree-Fock theory with quadrupole constraint to explore the various deformed configurations of  $N = 50$  nuclei  $^{82}\text{Ge}$ ,  $^{84}\text{Se}$  and  $^{86}\text{Kr}$ . Energy spectra are calculated from various intrinsic states using Peierls-Yoccoz angular momentum projection technique. Results of spectra and electromagnetic moments and transitions will be presented for  $N = 50$  nuclei and for  $Z = 50$   $^{114}\text{Sn}$  nucleus.

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