Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Investigation of Trapping Positions for Beryllium Atom in C_{60} Fullerene and Electron Densities at ^{7}Be Nucleus. LEE CHOW, ARCHANA DUBEY, H.P. SAHA, UCF Orlando, GARY S. COLLINS, Washington State University, Pullman, R.H. SCHEICHER, Uppsala University, Sweden, N.B. MAHARJAN, Tribhuvan University Nepal, SUNY Albany, S.R. BADU, R.H. PINK, M.B. HUANG, SUNY Albany, T.P. DAS, SUNY Albany, UCF Orlando — We are investigating, using first-principles Hartree-Fock Roothaan procedure, the trapping sites for ^{7}Be atom in C_{60} Fullerene, following broadly the same procedure as in earlier work by our group for trapping of muonium [1]. A number of possible sites, including the center of the C_{60} and various positions near the fullerene surface both outside and inside C_{60} are being studied including the effect of relaxation in the positions of neighboring C atoms. Electron densities at the ^{7}Be nucleus will be presented for the sites where the binding energy is positive to attempt to understand the observed anomalous electron capture rate compared to other systems where trapped ^{7}Be atom has been studied [2]. Results of our investigations for^{7}Be atom in graphite and graphene will also be presented for comparison with ^{7}Be in C_{60}. Possible influence of many-body effects will be discussed. [1] O. Donzelli, T. Briere, T.P. Das, Sol St. Comm. 90 663(1994), Indian J. Phys. 67 (Special Issue) 35 (1993) [2] Ohtsuki et al, Phys. Rev. Lett. 93,112501, (2004)

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Date submitted: 30 Nov 2007 Electronic form version 1.4