

Abstract Submitted
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A model for the Auger mediated quantum sticking of positrons at surfaces¹ S. MUKHERJEE, University of Texas Arlington, MANORI NADESALINGAM, UT dallas, PAUL GUAGLIARDO, ANTHONY SERGEANT, University of Western Australia, B. BARBIELLINI, Northeastern University, A.H. WEISS, NAIL FAZLEEY, University of Texas Arlington, J. WILLIAMS, University of Western Australia — We present a model of an efficient mechanism for positron sticking to surfaces termed here Auger mediated quantum sticking (AMQS). The AMQS process is closely related to the Auger de-excitation of atoms or molecules [1] near surfaces. We suggest that the positron excites an electron-hole pair while dropping to the surface state resulting in emission of a secondary electron. The relevant parameters of the model are the positron binding energy at the surface, the work function, the Fermi energy and the electron density of states. Our estimate for the reaction rates and the sticking probabilities are compared to detailed calculations by Walker et al. [2].

[1] H. D. Hagstrum, Phys. Rev. **96**, 336 (1954); B. Barbiellini and P.M. Platzman, New J. Phys. **8**, 20 (2006).

[2] A. B. Walker et al. , Phys. Rev. B **46**, 1687 (1992).

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