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Secondary Electron Emission Yield in the Limit of Low Electron Energy¹ A.N. ANDRONOV, A.S. SMIRNOV, SPbGU, St. Petersburg, Russia, I.D. KAGANOVICH, E.A. STARTSEV, Y. RAITSES, Princeton Plasma Physics Laboratory, V.I. DEMIDOV, West Virginia University, Morgantown, WV — Secondary electron emission (SEE) from solids plays an important role in many areas of science and technology. In recent years, there has been renewed interest in the experimental and theoretical studies of SEE. Several recent studies proposed that the reflectivity of very low energy electrons from solid surface approaches unity in the limit of zero electron energy, see e.g. discussion in Ref. [1]. If this were indeed the case, this effect would have profound implications on the formation of electron clouds in particle accelerators [2], plasma measurements with electrostatic Langmuir probes, and operation of Hall plasma thrusters for spacecraft propulsion. It appears that, the proposed high electron reflectivity at low electron energies contradicts to numerous previous experimental studies of the secondary electron emission. We address possible causes of these contradictions.

[1] J. Cazaux, J. Appl. Phys. 111, 064903 (2012).

[2] R. Cimino, et al, Phys. Rev. Lett. 93 014801 (2004)

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