Erratum: Electronic interaction of slow hydrogen, helium, nitrogen, and neon ions with silicon [Phys. Rev. B 107, 155145 (2023)]

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Due to an error in the iterative numerical evaluation of the electronic stopping cross section for He, N, and Ne ions in the paper, some of the presented values were displayed erroneously too high. The paper text remains valid, except for some statements regarding the comparisons with the previously measured data sets. More specifically, in Fig. 4, for He projectiles, there is an agreement within uncertainties with the data sets from Tran *et al.* [1] and Konac *et al.* [2]. Predictions from SRIM [3] and ESPNN [4] describe the SCS adequately. In Fig. 5, for N projectiles, the present data agree with the scarce previously measured data from Santry and Werner [5]. The predictions from SRIM agree with the measured data set while ESPNN slightly underestimates the SCS. In Fig. 6, the present data display slightly lower values for Ne projectiles than the data by Grahmann and Kalbitzer [6] and Hoffman *et al.* [7]. SRIM and ESPNN slightly overestimate the SCS. Predictions from DFT [8], for He ions, overestimate the SCS over the whole velocity range, with differences up to ∼20%. For N and Ne ions, DFT predictions remain significantly lower. The new values of the electronic SCS are compiled in the new figures (the reference numbering refers to the paper) as follows:

(1) He ions:

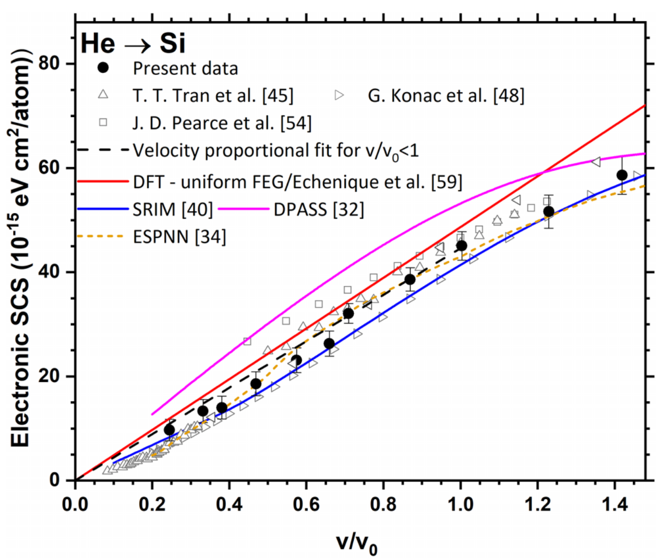

FIG. 4. Electronic stopping cross sections of Si for He ions as a function of velocity. SRIM (blue line) and ESPNN predictions (dark yellow dashed line) along with theoretical predictions and previously measured data sets are also included. The black dashed line corresponds to a velocity proportional fit to the present SCS (up to 1 v/v_0) as a function of velocity.

(2) N ions:

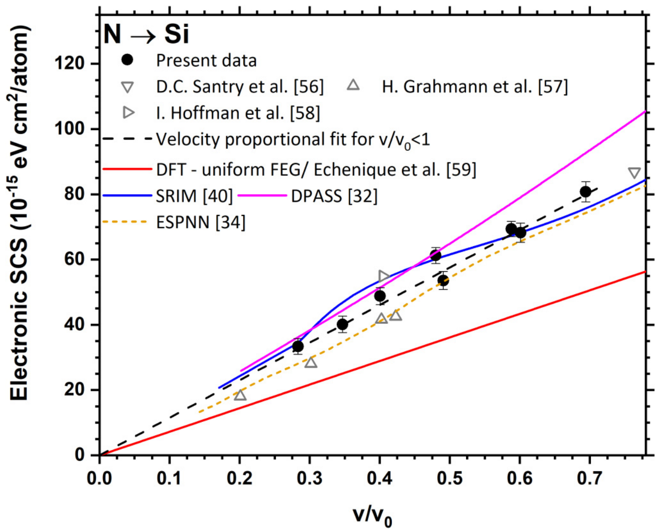

FIG. 5. Electronic stopping cross sections of Si for N ions as a function of velocity. SRIM (blue line) and ESPNN predictions (dark yellow dashed line) along with theoretical predictions and previously measured data sets are also included. The black dashed line corresponds to a velocity proportional fit to the present SCS (up to 1 v/v_0) as a function of velocity.

(3) Ne ions:

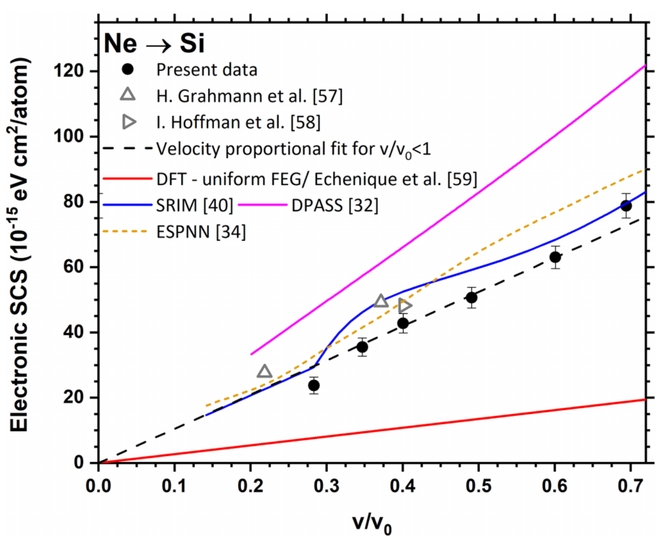

FIG. 6. Electronic stopping cross sections of Si for Ne ions as a function of velocity. SRIM (blue line) and ESPNN predictions (dark yellow dashed line) along with theoretical predictions and previously measured data sets are also included. The black dashed line corresponds to a linear fit to the present SCS (up to 1 v/v_0) as a function of velocity.

Based on the new fits to the data for $v/v_0 < 1$ assuming velocity proportionality of the electronic energy loss, we recalculate the measured friction coefficient for N which corresponds to a FEG with a density parameter of $r_{s,\mathrm{exp}} = 1.6$ and $N_{\mathrm{val,exp}} = 17.2$ electrons per Si atom and for Ne, to $r_{s,\mathrm{exp}} = 1.3$ and $N_{\mathrm{val,exp}} = 14.7$ electrons per Si atom. The discussion and conclusions in the paper remain unaffected by the updated $r_{s,\mathrm{exp}}$ and $N_{\mathrm{val,exp}}$ values for N and Ne ions since these values are still extraordinarily high electron densities per matrix atom.

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