**Snowdon and Heiland Respond:** We recently proposed an associative ionization mechanism as one of the possible methods of producing sputtered molecular ions. This mechanism provided a consistent interpretation of the entire emission spectrum between 200 and 880 nm observed during low energy, light ion bombardment of high-dose nitrogen implanted silicon, if the emission was identified as arising from the $B^2\Sigma_u^+ - X^2\Sigma_g^+$ and $A^2\Sigma_u - X^2\Sigma_g^+$ transitions of $N_2^+$.[1] That sufficient nitrogen atoms exist in the surface of N implanted Si to permit such a process has recently been supported by the experiment of Thomas *et al.*,[2] in which an N surface peak was identified in N implanted Si in the energy range of our experiment. That such electronic interactions occur between molecules and surfaces is supported by the identification of the inverse process of dissociative electron capture in low energy and thermal molecule scattering.[3,4]

Using a specially developed intensified diode array detector, with noise characteristics of 0.03 counts/sec/diode, we have since remeasured the spectrum with 0.08-nm resolution, and attempted to explain as much as possible of the recorded emission as arising from the SiN $B$-$X$ system. If SiN indeed contributes to the emission, only the $B^2\Sigma$ $v' = 0, 1, 2$, and 3 vibrational states appear to be populated. Best-fit spectra, calculated by use of the equilibrium constants of Bredohl *et al.*,[5] convoluted with our measured instrumental line shape, imply a rotational distribution for the $B^2\Sigma$ $v' = 0$ level peaking at $N = 59$ with half-width $\Delta N = 33$ and for the $v' = 1$ level, $N = 45$, $\Delta N = 33$ (corresponding, respectively, with the $\approx 412$ and $\approx 414$ nm features of the Loxton *et al.* spectrum). At most 10% of the total emission intensity of our spectrum in the wavelength interval discussed by Loxton *et al.* appears to be explainable by known SiN emission bands. The (dominant) residual spectrum exhibits a rotational line spacing consistent with that of the $N_2$ or $N_2^+$ molecule.

We can conclude, therefore, that SiN molecules may indeed contribute to the emission, but if so, are also highly rotationally excited, and thus do not, as maintained by Loxton *et al.*, lose their rotational energy to the surface.

A detailed report on the above work is in preparation.

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