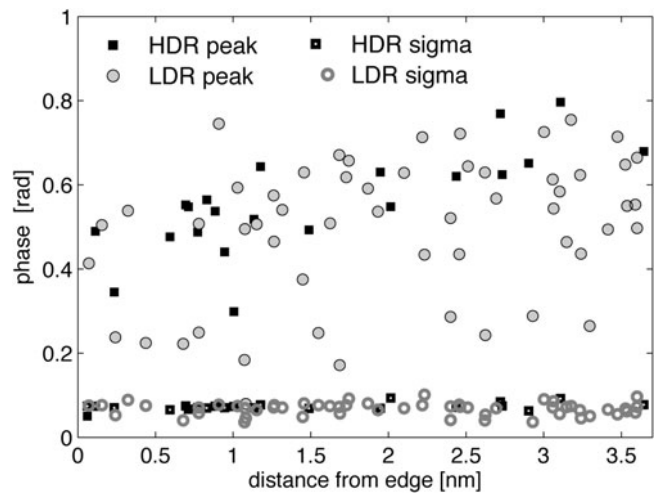


**Supplementary Figure 1.** Calculated cross sections for displacement (knock-on) damage events for selected diatomic molecules composed of light elements. The binding energies are given for each molecule.



**Supplementary Figure 2.** Amplitudes (peak) and standard deviations (sigma) of a fit of double Gaussians to dumbbells in the EWR phase of a Si[110] at 80 kV (cf. Fig. 12), plotted as a function of distance from the edge. Black, HDR conditions; gray, LDR conditions.