

Supporting information for:

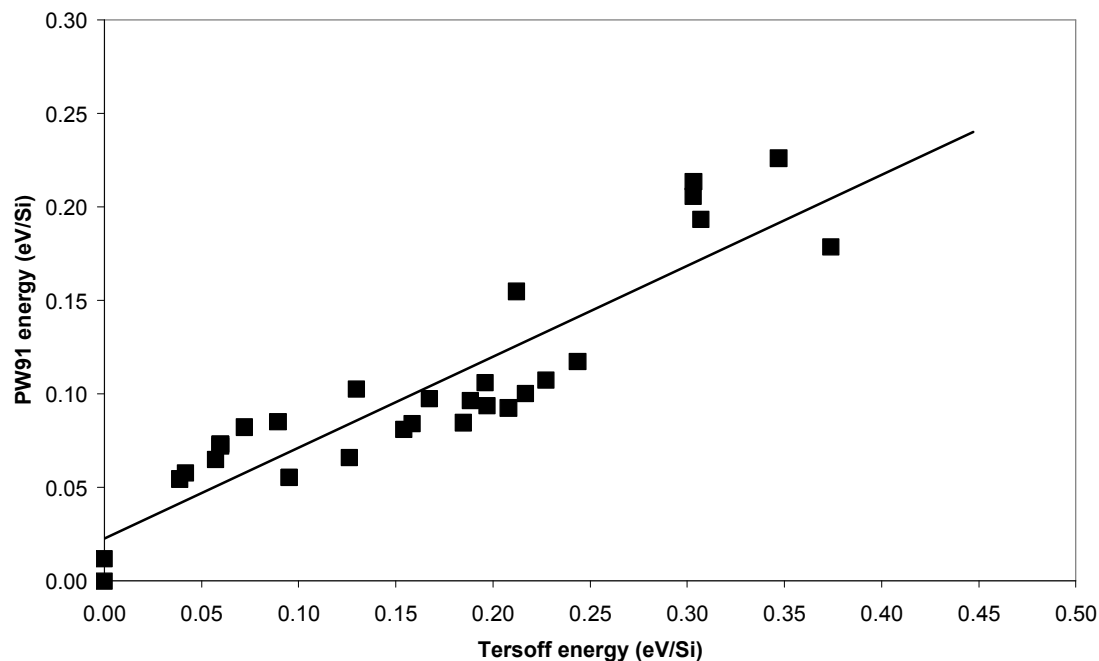
**An extensive theoretical survey of low-density allotropy in silicon**

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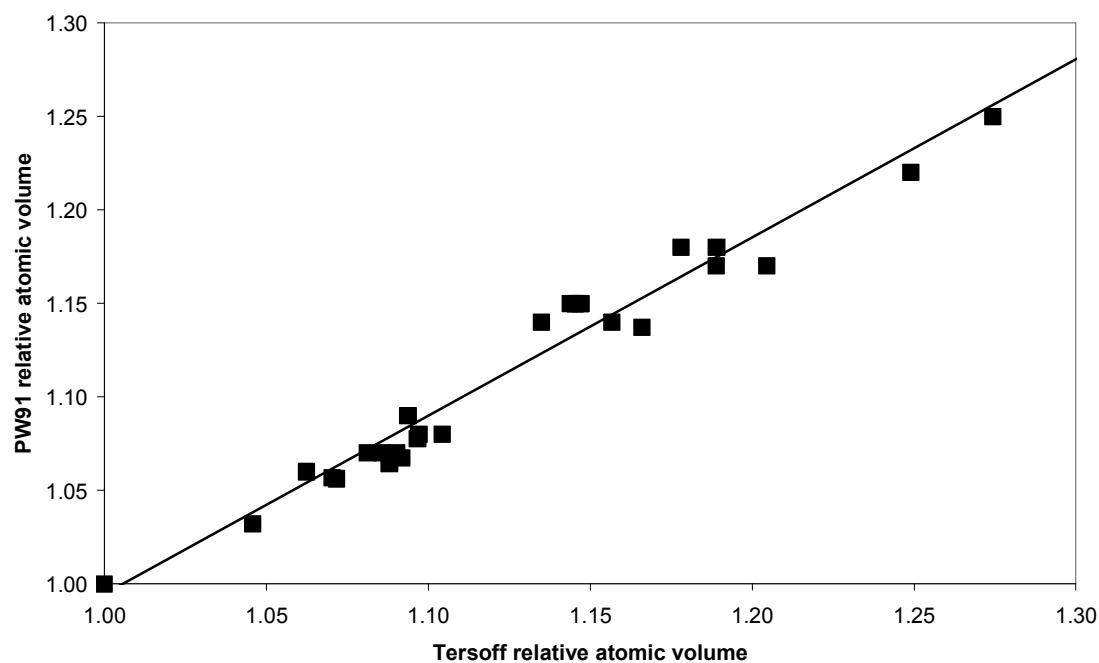
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**Fig. S1** Tersoff potential calculated energies with respect to diamond for a range of silicon structures plotted against their PW91 calculated counterparts. The range of structures considered included the 5-6 clathrates, the structures taken from Conesa (including *ngs*) and the structures based on known zeolites. The  $R^2$  value of the linear fit obtained (line shown) is 0.82.



**Fig. S2** Tersoff potential calculated relative atomic volumes with respect to diamond for a range of silicon structures plotted against their PW91 calculated counterparts. The range of structures considered is the same as for Fig. S1. The  $R^2$  value of the linear fit obtained (line shown) is 0.96.