

Supplementary information

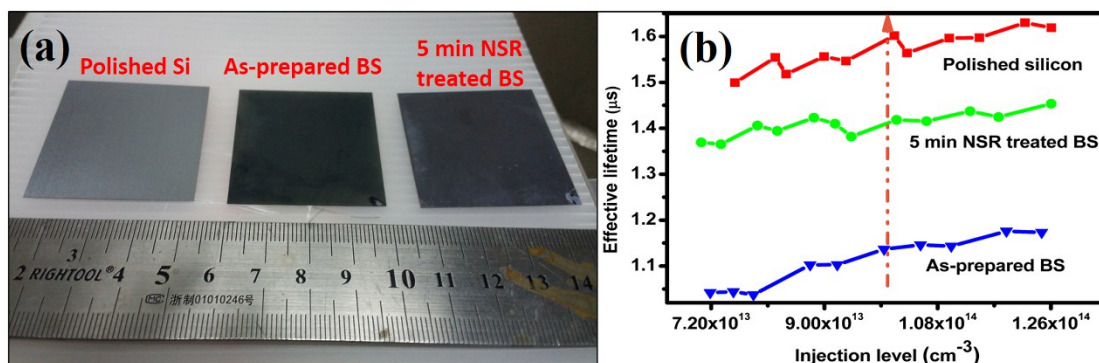


Fig.S1. (a) Typical macro pictures of different samples before ALD Al_2O_3 passivation and (b) Effective minority carrier lifetime of different samples before ALD Al_2O_3 passivation as a function of injection level.

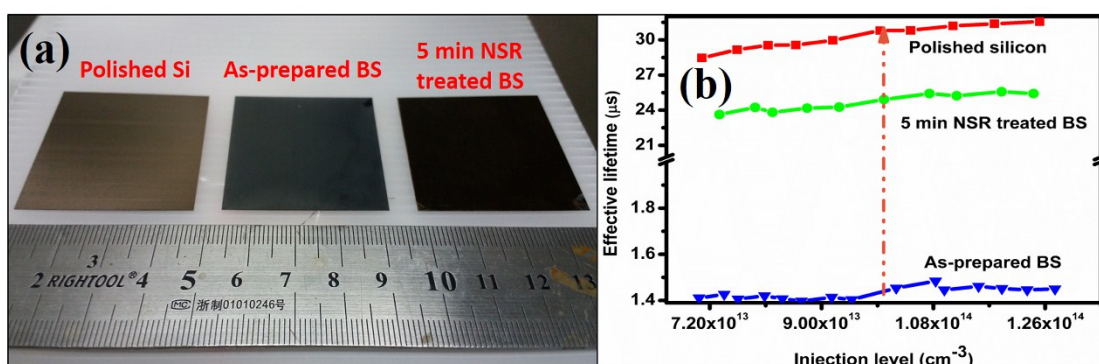


Fig.S2. (a) Typical macro pictures of different samples after ALD Al_2O_3 passivation and (b) Effective minority carrier lifetime of different samples after ALD Al_2O_3 passivation as a function of injection level.