



Figure S1 ESR spectra of n-doped Si wafer (a), epitaxial Si films fabricated via RVD with P-doped Si source on DLPS before (b) and after ZHR at different HB and scan rates (c-f).

Table SI Spin densities of epitaxial Si films fabricated via RVD with P-doped Si source on DLPS with and without ZHR measured using ESR.

	No ZHR	$20 \times 10^3 \text{ kJ/m}^2$	$140 \times 10^3 \text{ kJ/m}^2$
-	7.81	-	-
1 mm/s	-	8.65	-
5 mm/s	-	8.25	2.91
26 mm/s	-	-	7.11
wafer	85.8	-	-

* 単位 : $\times 10^{17} \text{ spin/cm}^3$