

# The formation mechanics of porous silicon prepared from dense silicon monoxide

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Table S1 The crystallite sizes of MgO and Si.

Sample number	average crystallite size of MgO (nm)	crystallite size of Si before MgO removal (nm)	crystallite size of Si after MgO removal (nm)
PSi-06	8	9	12
PSi-12	7	8	11
PSi-18	8	8	13
PSi-24	10	11	13
d-SiO	/	4	/
PSi-06D	10	6	6
PSi-12D	10	6	7
PSi-18D	9	7	8
PSi-24D	10	8	8

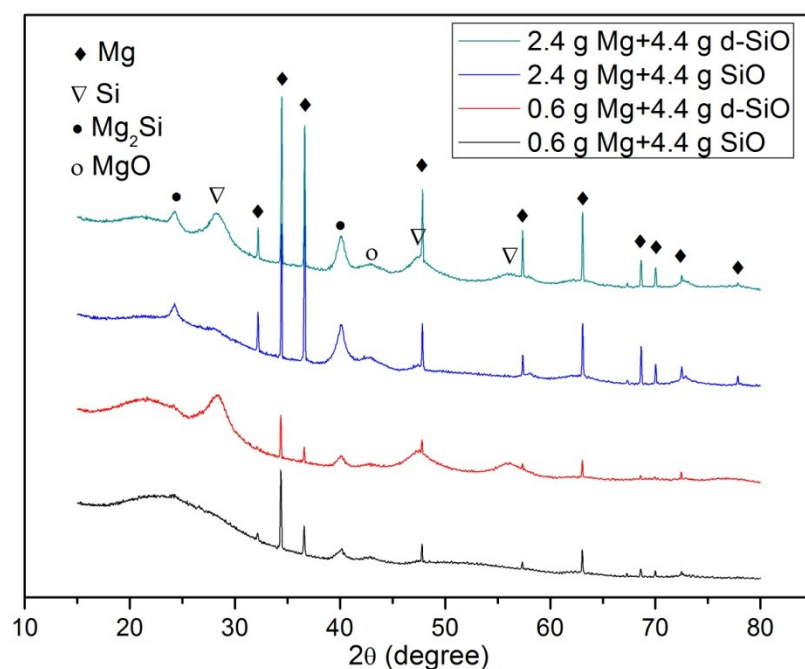


Fig.S1 Powder XRD of the samples prepared by treating the mixtures of Mg and SiO/d-SiO at 300 °C for 3 h.

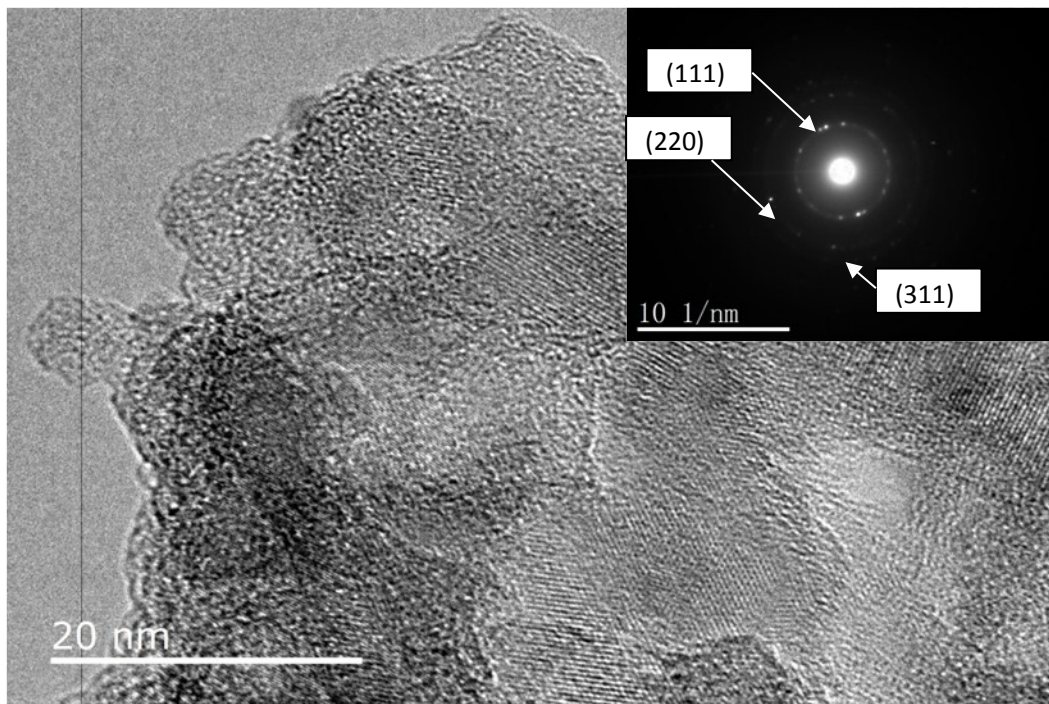


Fig.S2 High-resolution TEM image and SAED (inset) of PSi-24, silicon grains with size of ~10 nm are visible.

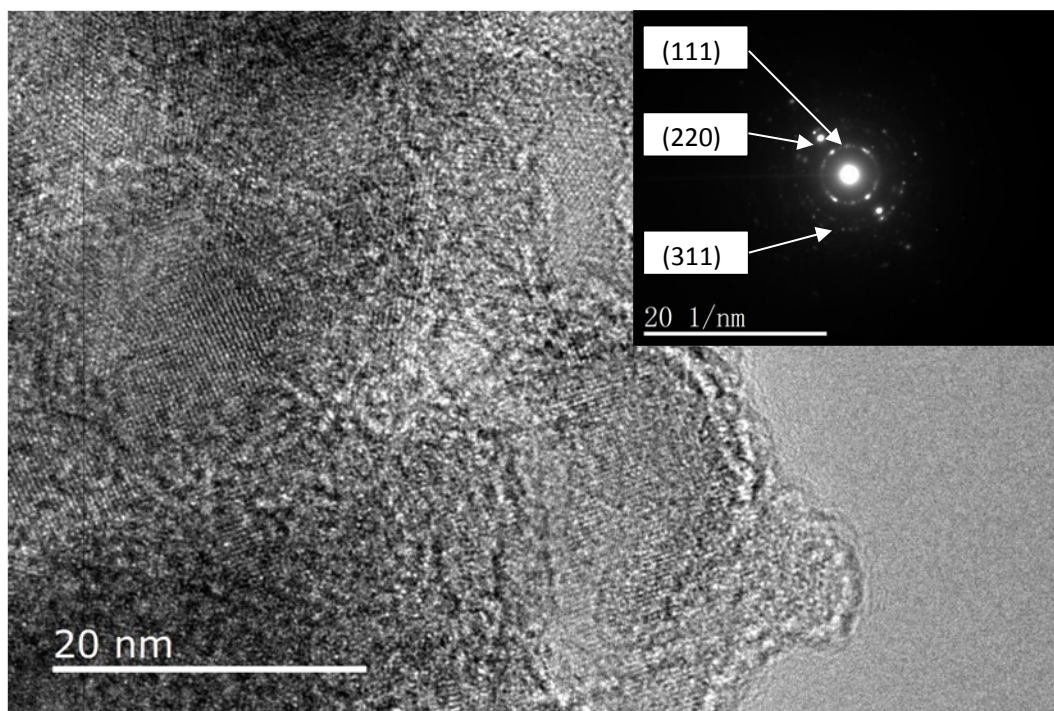


Fig.S3 High-resolution TEM image and SAED (inset) of PSi-24D, silicon grains with size of ~10 nm are visible.

Table S2 element contents of all PSi.

	Silicon content (%)	Oxygen content (%)	Magnesium content (%)
PSi-06	70.25	29.18	0.57
PSi-12	73.58	25.33	1.10
PSi-18	83.90	15.43	0.67
PSi-24	85.05	14.03	0.92
PSi-06D	61.36	38.65	0
PSi-12D	74.76	24.29	0.95
PSi-18D	84.68	14.56	0.76
PSi-24D	90.25	8.40	1.36

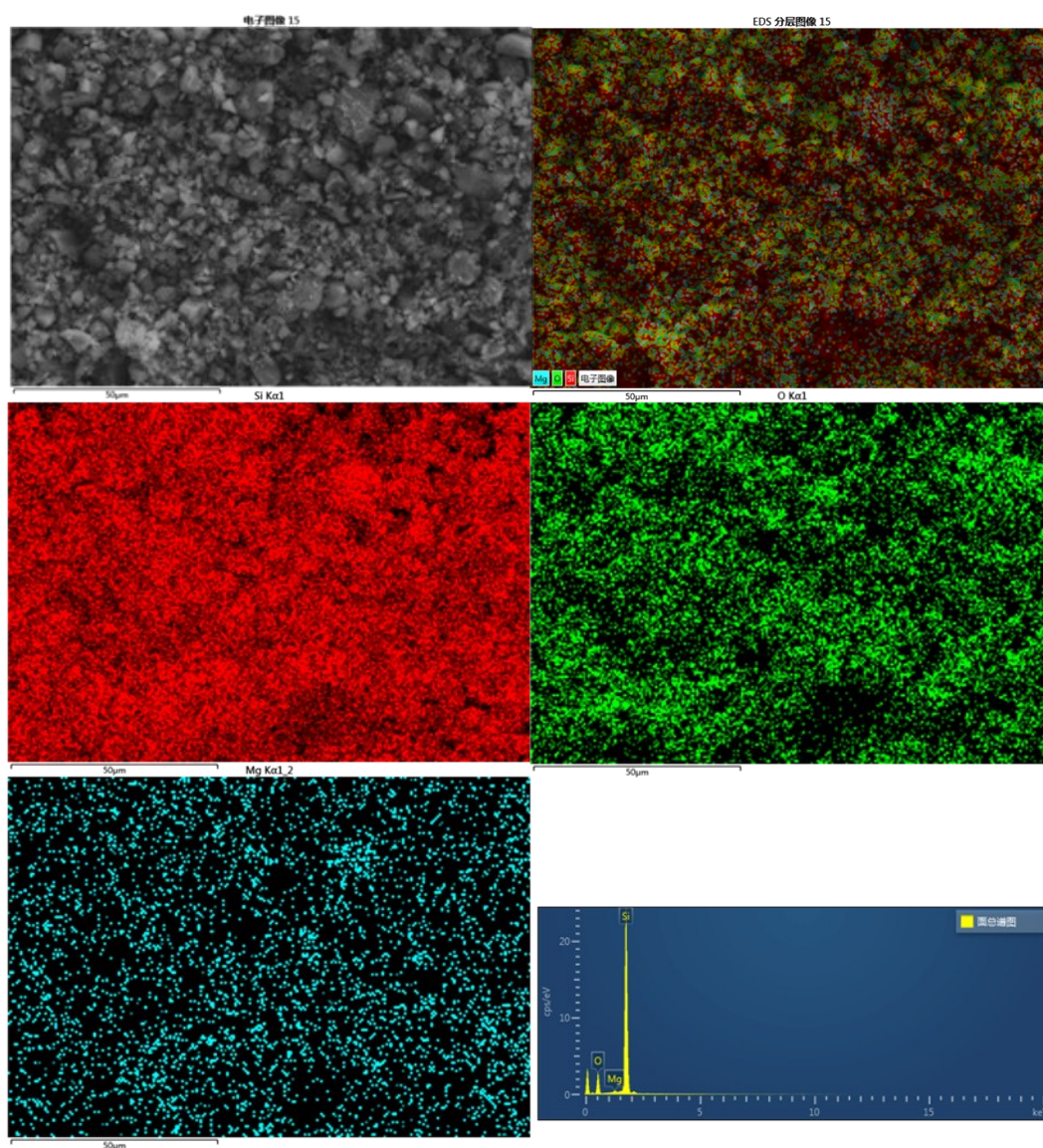


Fig.S4. EDS of PSi-18

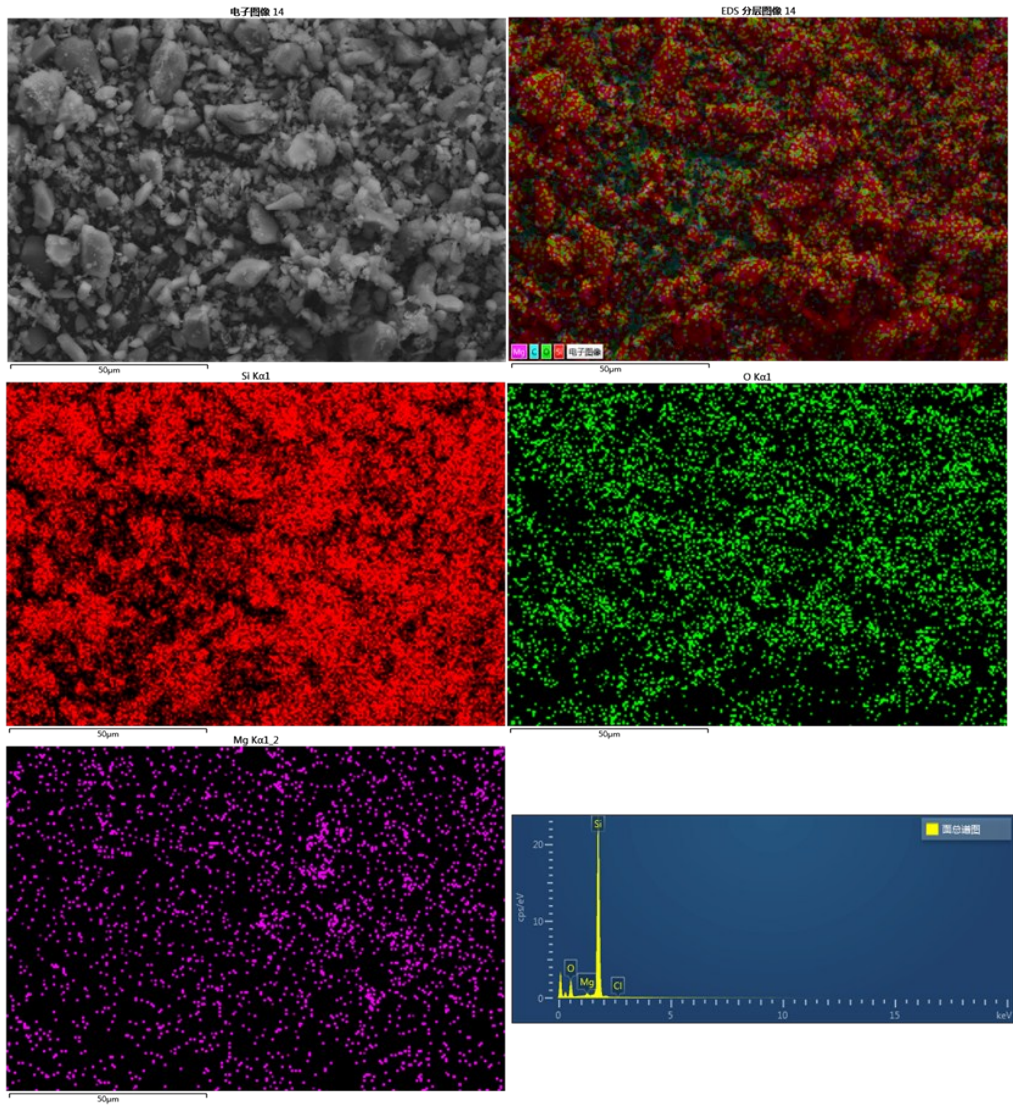


Fig. S5 EDS of PSi-24.

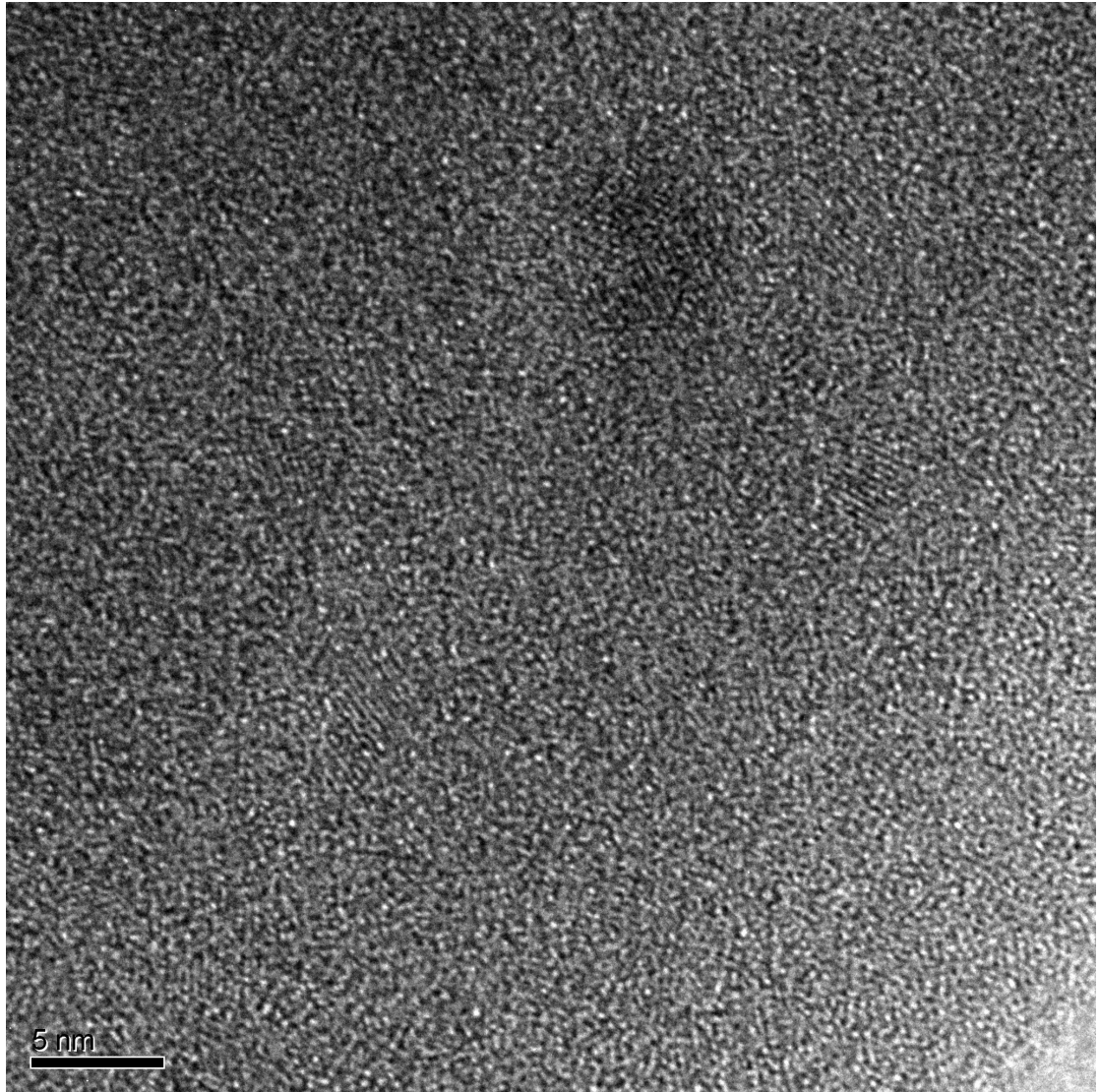


Fig. S6 High-resolution TEM image of d-SiO.