Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

An effective coupling of nanostructured Si and gel polymer electrolytes for high-performance lithium-ion battery anodes

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Table S1. Electrochemical performances of various Si anodes combined with liquid electrolytes (LE) and gel-polymer electrolytes (GPE).

	1st Cycle Coulombic Efficiency (%)		Cycle Rentention (%)		Volume Expansion (%)	
	LE	**GPE**	**LE**	**GPE**	**LE**	**GPE**
Mesoporous Silicon	77	75	48	76	131	65
Macroporous Diatomite	86	87	51	73	187	134
Illite	84	84	61	64	195	101

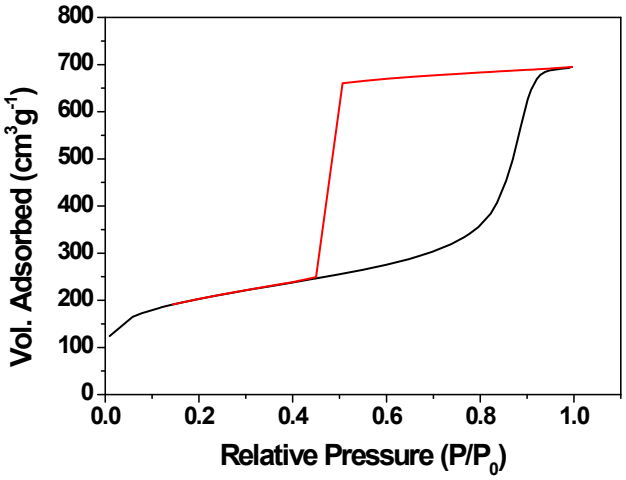

Fig. S1 The surface area of synthesized silica foam after heat treatment showing 686.17m^2 g^{-1}.

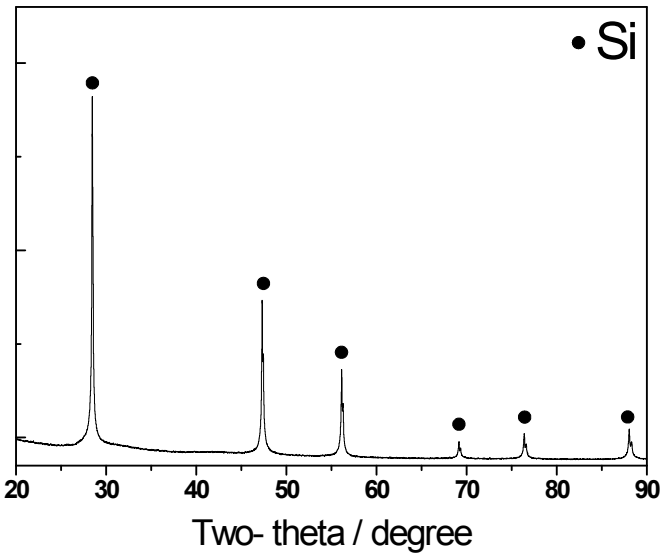

Fig. S2 The XRD patterns of reduced diatomite by magnesiothermic reduction reaction indicating pure silicon peaks only. It means that only crystalline silicon remained and there is no compounds such as Mg_2SiO_4 and Mg_xSi_y after MRR.