

## Supporting Information

### Large pore mesoporous Ca-Si-based bioceramic with high *in vitro* bioactivity and adsorption capability of protein for bone tissue regeneration

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**Table S1** Nucleotide sequences for real-time RT-PCR primers

Gene	Direction	Primer sequence (5'-3')
ALP	Forward	GTCCCACAAGAGCCCACAAT
	Reverse	CAACGGCAGAGCCAGGAAT
PPAR $\gamma$	Forward	CAGGCTTGCTGAACGTGAAG
	Reverse	ACGTGCTCTGTGACAATCTGC
OCN	Forward	CAGTAAGGTGGTGAATAGACTCCG
	Reverse	GGTGCCATAGATGCGCTTG
OPG	Forward	TGGATGAACCAAGCGTGGA
	Reverse	TCGCCTGACTGTCGATAGCA
GAPDH	Forward	TTCGACAGTCAGCCGCATCTT
	Reverse	ATCCGTTGACTCCGACCTTCA

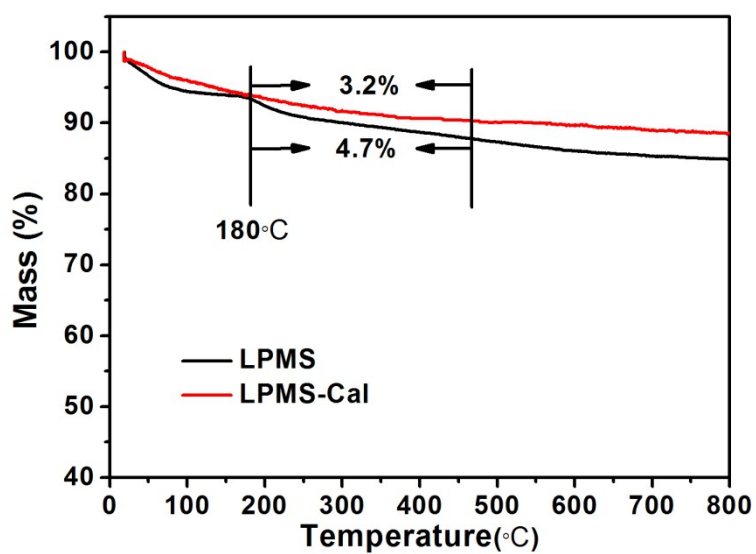


Fig.S1 TG curves for LPMS and LPMS-Cal.

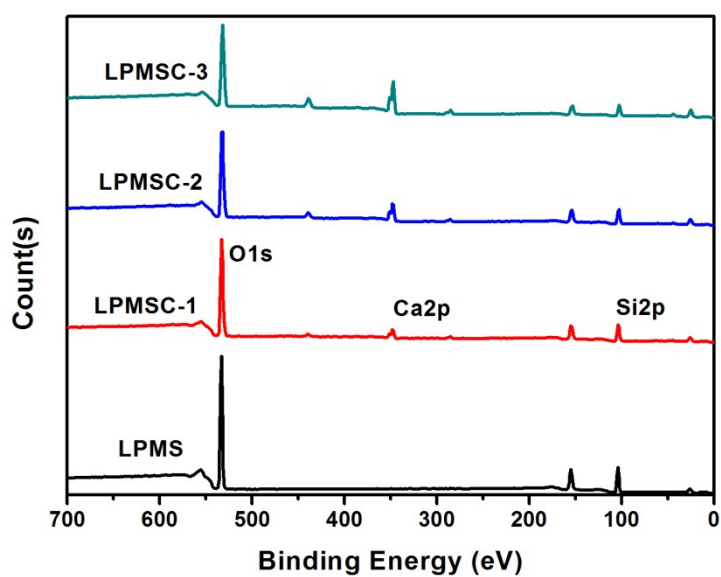
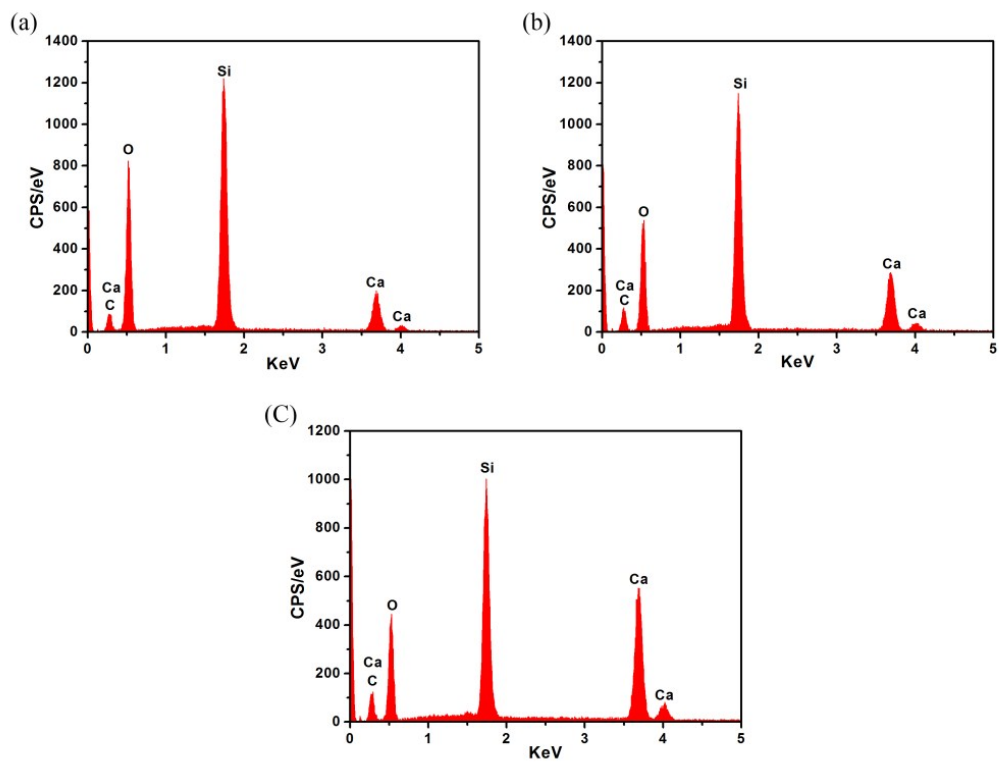
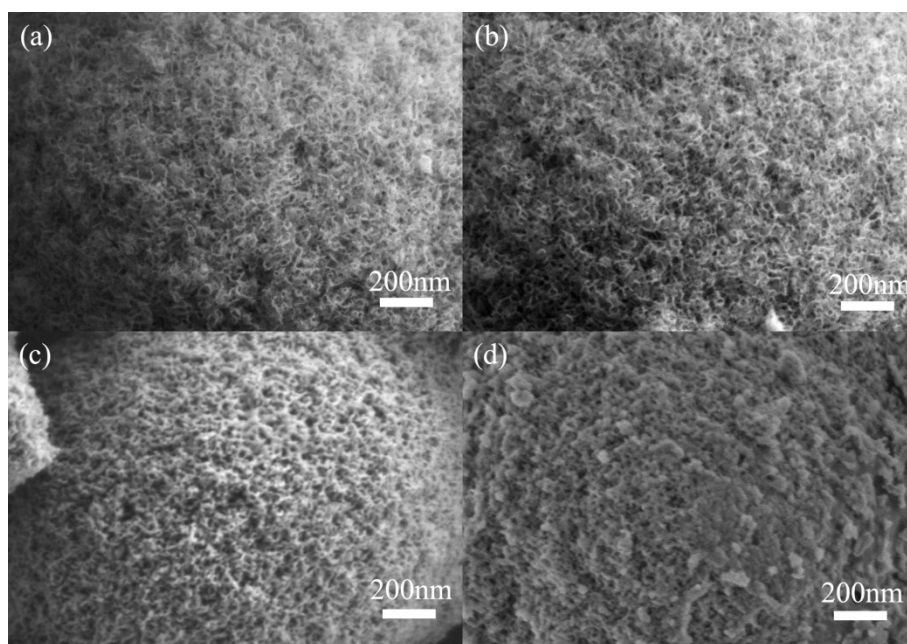


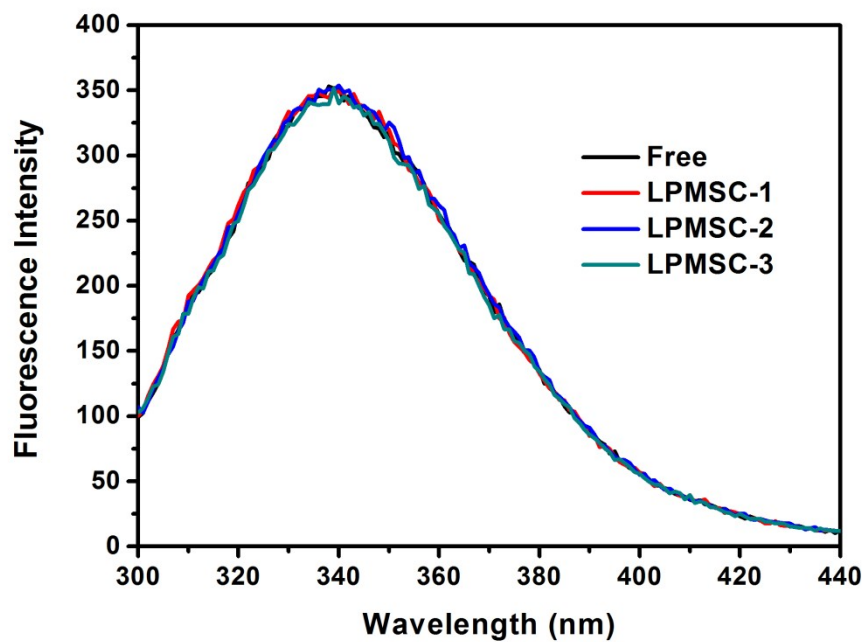
Fig.S2 XPS analysis of LPMS and LPMSCs



**Fig.S3** EDS analysis for (a) LPMSC-1, (b) LPMSC-2 and (c) LPMSC-3



**Fig.S4** SEM images of (a) LPMSC, (b) LPMSC-1, (c) LPMSC-2 and (d) LPMSC-3 in high magnification



**Fig.S5** Intrinsic fluorescence emission of (a) free BSA, (b) BSA desorbed from LPMSC-1, (c) BSA desorbed from LPMSC-2 and (d) BSA desorbed from LPMSC-3