

Supplementary Information

Preparation and Thermal Properties of UV-Curable

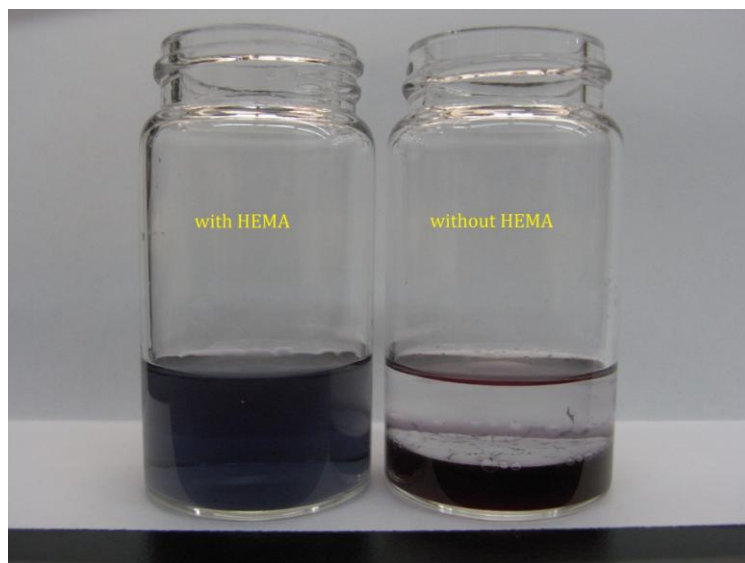
Polyacrylate-Gold Nanocomposite Foams

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(a)



(b)

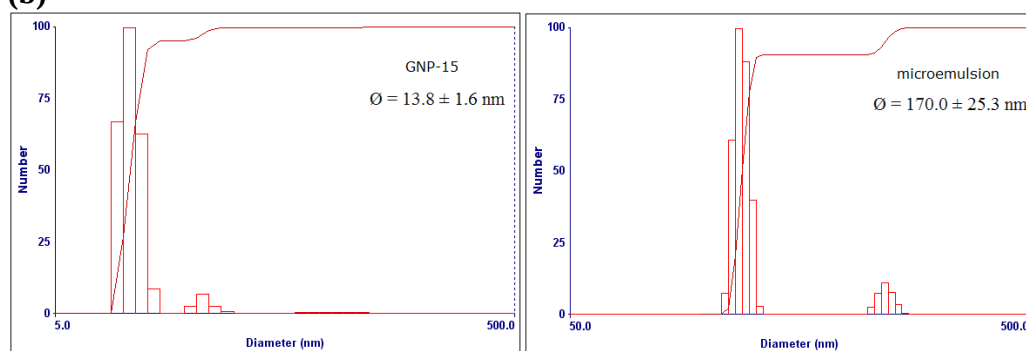


Fig. S1 (a) The microemulsion architectures are formed or not that with and without HEMA, (b) confirm the formation of microemulsion using dynamic light scattering.

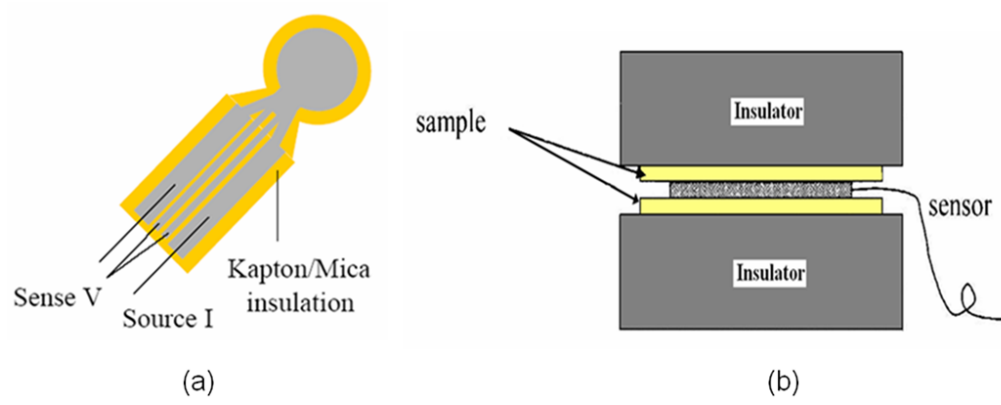


Fig. S2 (a) Hot disk sensor with Kapton/Mica insulation, (b) test device of Hot Disk thermal constants analyzer.

Table S1 Swelling test of PHM and PGNs.

	$W_i(g)^a$	$W_s(g)$	$W_d(g)$
PHM	0.37 ± 0.01	2.11 ± 0.02	1.41 ± 0.02
PGN-15	0.38 ± 0.01	2.31 ± 0.01	1.52 ± 0.01
PGN-25	0.35 ± 0.01	1.90 ± 0.01	1.22 ± 0.01

^a The original weight of sample.

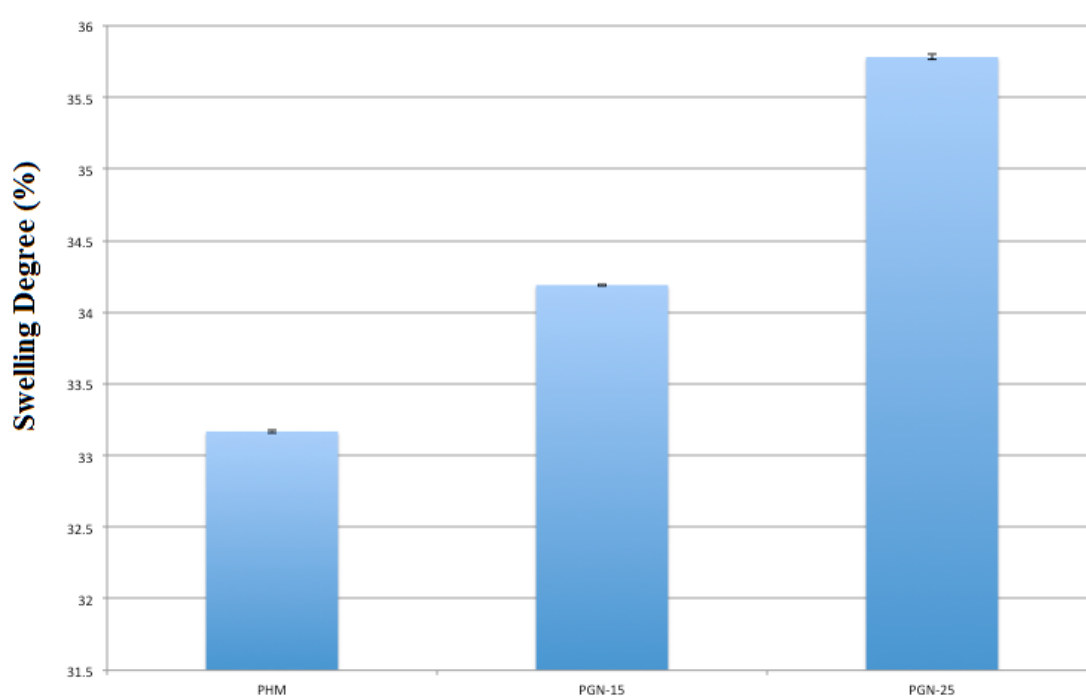


Fig. S3 The histogram of the swelling degree of the samples. Data are given as mean $\pm$ SD ($n = 5$)

Table S2 Morphological parameters, thermal stability, transport, and mechanical properties of PGN and FPGN materials.

Sample Code	Morphological parameters			Thermal stability		Transport properties		Mechanical properties
	ρ_f (g · cm ⁻³)	d (μ m)	$N_c \times 10^{10}$ (cell · cm ⁻³)	T _g (°C)	T _d (°C)	k (W/mK)	α (mm ² /s)	k' (MPa)
PHM	—	—	—	104.48	272.80	0.2563 ± 0.0001	0.1164 ± 0.0001	—
PGN-15	—	—	—	87.13	237.97	0.2881 ± 0.0002	0.1515 ± 0.0002	—
PGN-25	—	—	—	91.63	247.09	0.2745 ± 0.0001	0.1250 ± 0.0002	—
FPHM	0.52	109.69	0.43	91.83	233.82	0.1527 ± 0.001	0.1155 ± 0.001	6.58
FPGN-15 ^a	0.55	108.25	0.45	—	—	—	—	—
FPGN-15	0.68	39.60	6.89	93.91	245.43	0.1434 ± 0.0005	0.1038 ± 0.0004	11.29
FPGN-25	0.66	54.86	2.77	94.66	249.58	0.1501 ± 0.0006	0.1042 ± 0.0006	10.34

^a FPGN-15 synthesized by thermal curing

