

Supplementary information

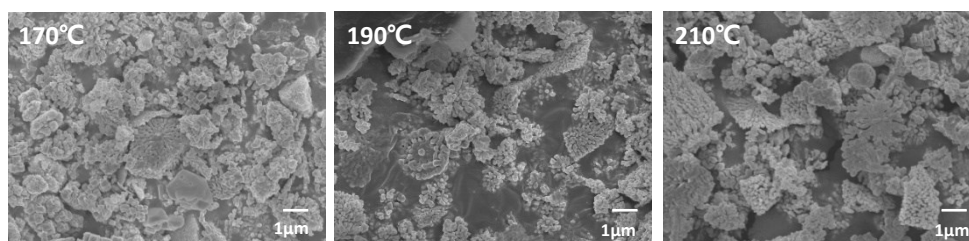


Fig. S1 FE-SEM images of BT particles after hydrothermal synthesis by reaction temperature (x5000)

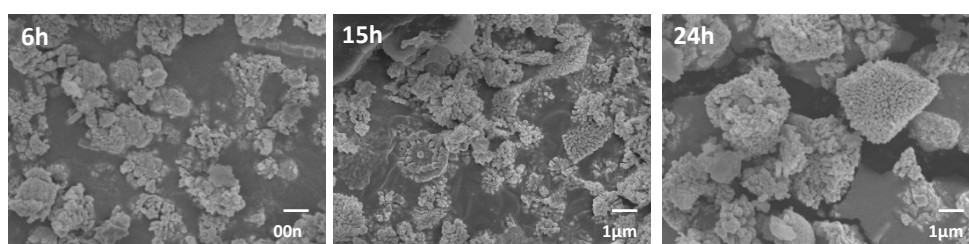


Fig. S2 FE-SEM images of BT particles after hydrothermal synthesis by reaction time (x5000)

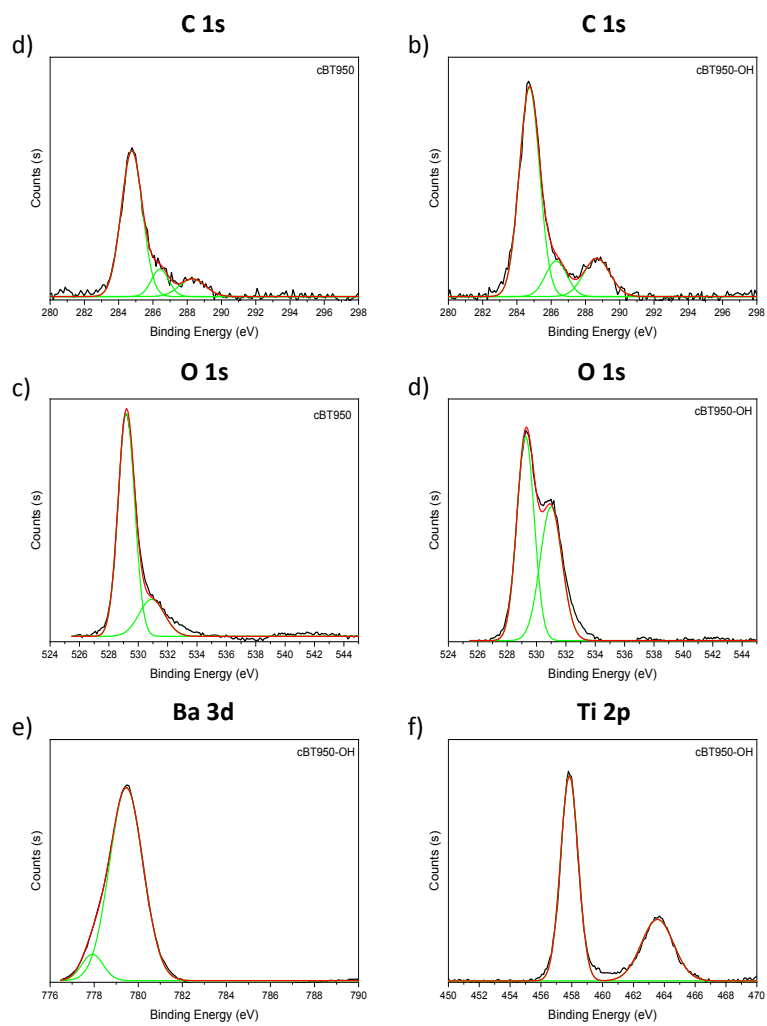


Fig. S3 XPS photoelectron spectra of cBT950 before and after hydroxylation. a) cBT950 C 1s, b) cBT950-OH C 1s, c) cBT950 O 1s, d) cBT950-OH O 1s, e) cBT950-OH Ba 3d and f) cBT950-OH Ti 2p

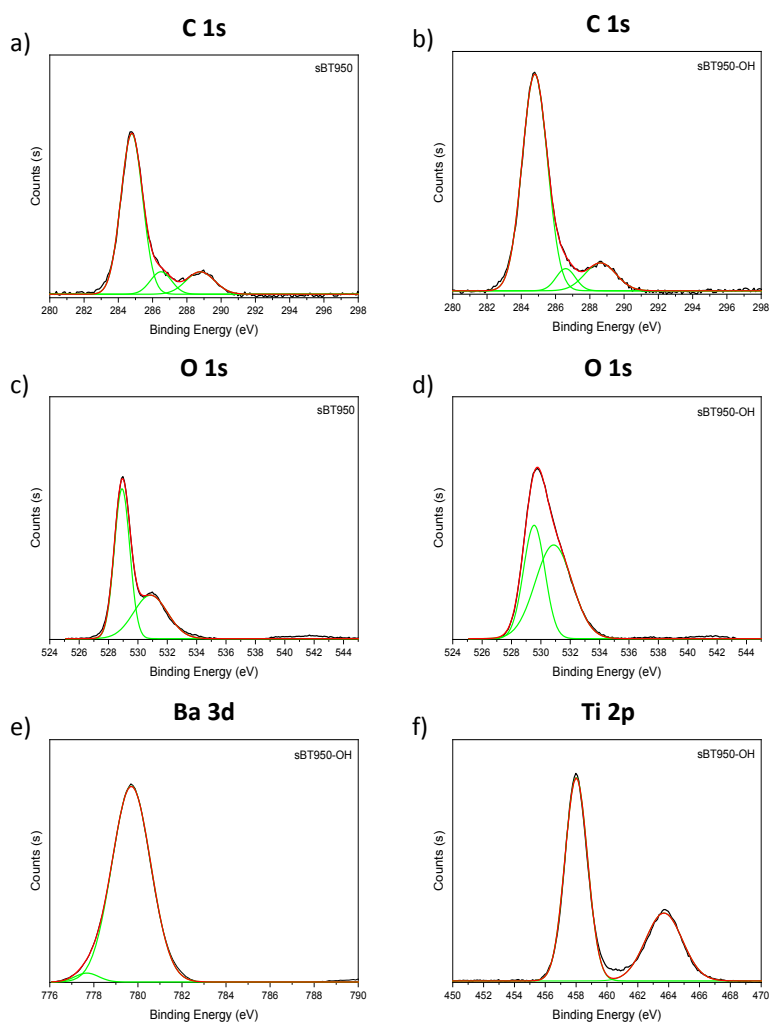


Fig. S4 XPS photoelectron spectra of sBT950 before and after hydroxylation. a) sBT950 C 1s, b) sBT950-OH C 1s, c) sBT950 O 1s, d) sBT950-OH O 1s, e) sBT950-OH Ba 3d and f) sBT950-OH Ti 2p

Table.S1XPS integrated peak area of C 1s, O 1s, Ba 3d and Ti 2p in cBT950 series

	C 1s		O 1s		Ba 3d		Ti 2p	
	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area
cBT950	284.77	6599	529.18	29197				
	286.41	1013	530.36	7418				
	288.30	979						
cBT950-OH	284.73	9070	529.26	27432	777.92	92149	457.85	21339
	286.29	1628	530.99	22823	779.46	8047	463.55	11720
	288.67	2141						

Table.S2XPS integrated peak area of C 1s, O 1s, Ba 3d and Ti 2p in sBT950 series

	C 1s		O 1s		Ba 3d		Ti 2p	
	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area	BE(eV)	Intensity integrated from peak area
sBT950	284.78	35984	528.92	122435				
	286.59	7040	530.86	77519				
	288.62	4868						
sBT950-OH	284.78	58303	529.54	128342	777.69	534974	458.01	123725
	286.49	4542	530.87	182148	779.70	14707	463.69	67286
	288.78	9218						

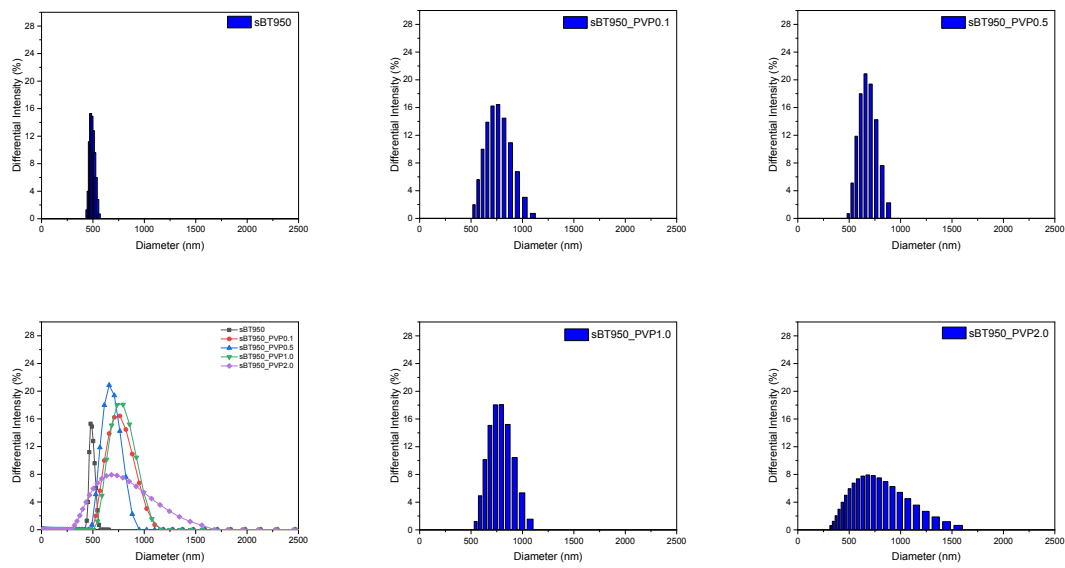


Fig. S5 Particle size distribution of sBT950 series after modification by measuring PSA

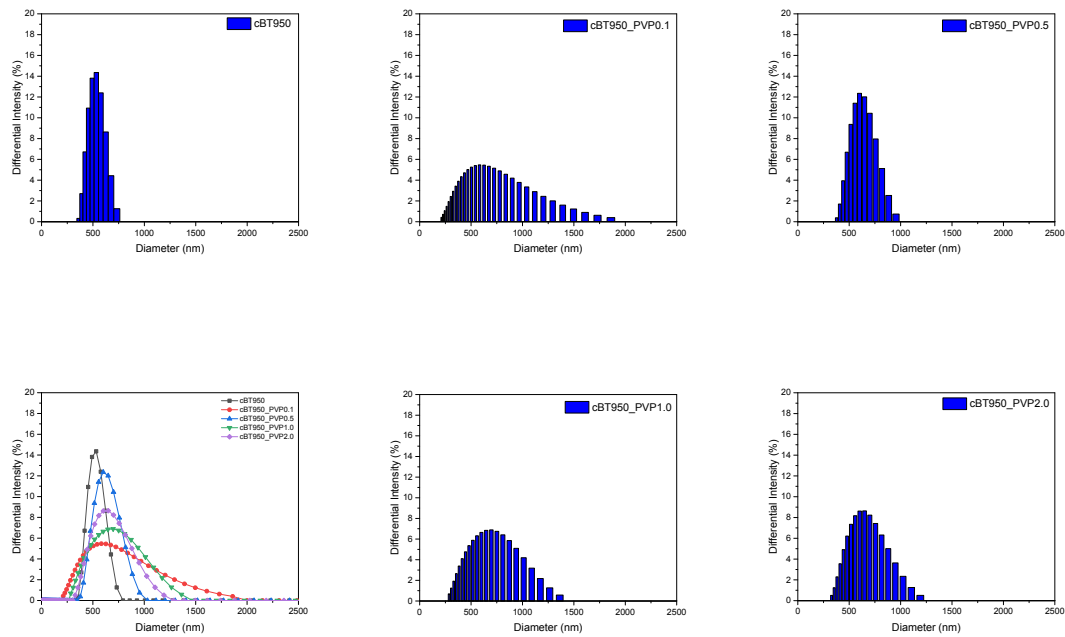


Fig. S6 Particle size distribution of cBT950 series after modification by measuring PSA

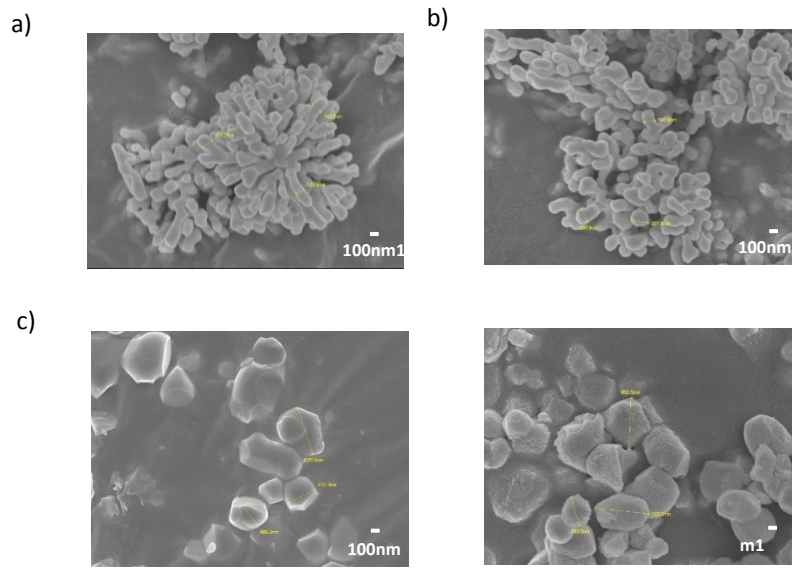


Fig. S8 FE-SEM images of BaTiO₃ composite in PDMS. (x500) a) cBT, b) cBT950_PVP, c) sBT and d) sBT950_PVP composite

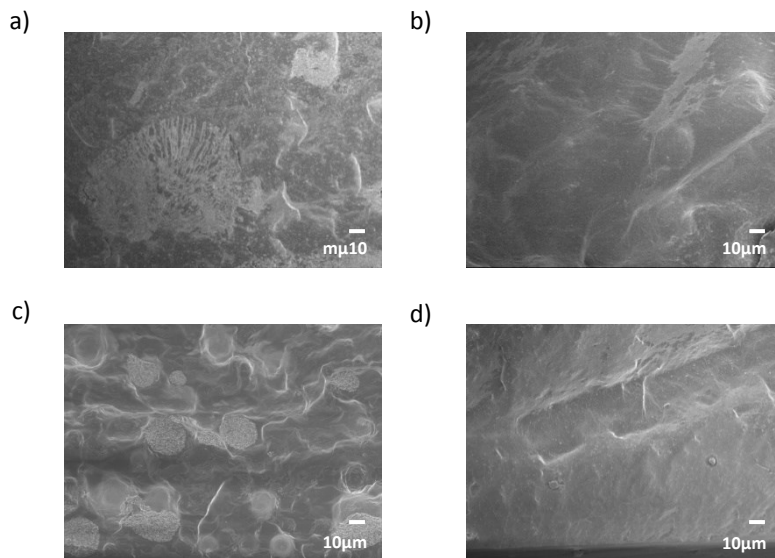


Fig. S8 FE-SEM images of BaTiO₃ composite in PDMS. (x500) a) cBT, b) cBT950_PVP, c) sBT and d) sBT950_PVP composite