

Supplementary information

The electrical behaviour of the ultrafine bismuth phosphate particles under a range of temperature and frequency conditions

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Table S1: Raman active peaks (ν_1 - ν_8) of BPO and BPO nanoparticles within the frequency range from 40-1110 cm^{-1} .

Peaks Positions (cm^{-1})	ν_1	ν_2	ν_3	ν_4	ν_5	ν_6	ν_7	ν_8
BPO	69.3	116.5	165.3	243.2	269.6	361.8	430.7	1073.6

Table S2: Fitting parameters extracted from the equivalent circuit models for the BPO nanoparticle under different temperature condition.

Temperature ($^{\circ}\text{C}$) (BPO)	$R_g(\Omega) \times 10^6$	$Q_g(\text{pF})$	α_1	$R_{gb}(\Omega) \times 10^6$	$Q_{gb}(\text{pF})$	α_2	$W(\Omega/\sqrt{s})$
30	2.65	33.2	0.97	525	4.03	0.91	30.2
40	2.54	33.6	0.97	503	4.15	0.89	32.0
50	2.51	34.1	0.98	488	4.22	0.88	47.8
60	2.41	36.3	0.98	348	4.34	0.86	52.3
70	2.35	38.2	0.98	285	4.56	0.85	58.1
80	2.32	42.1	0.97	209	4.91	0.83	63.4

Figure: S1

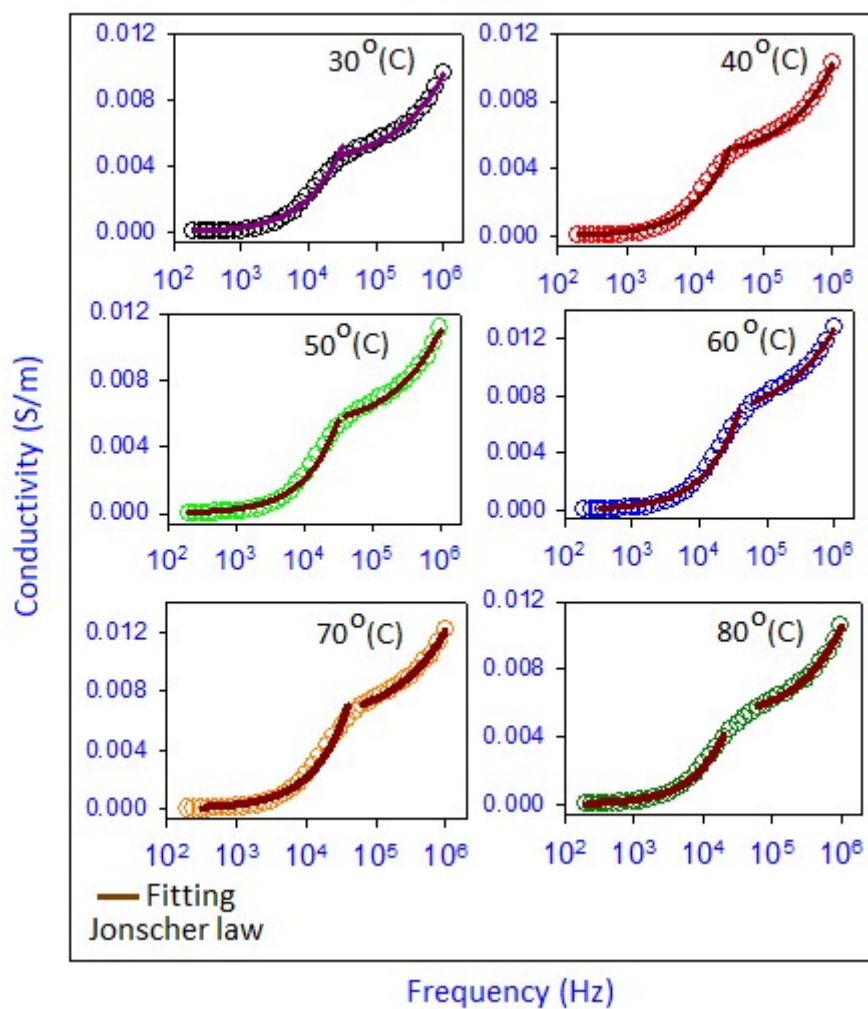


Figure S1: AC conductivity of bismuth phosphate nanoparticles measured under the temperature range from 30 to 80 °C. The solid red line is the fitting of the curve according to the Jonscher's equation.