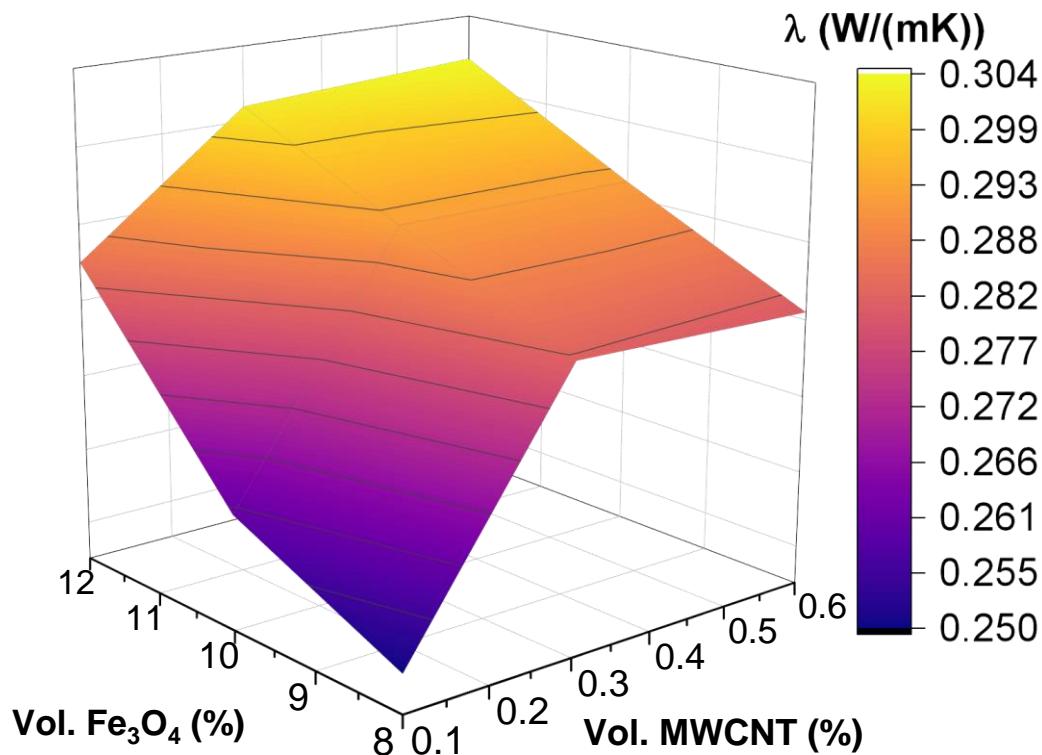


## Supplementary Materials



**Figure S1.** Surface plot of thermal conductivity of hybrid composites at 25 °C.

**Table S1.** Coded factors and initial Y values for the surface response model of  $R_s$ .

Composite	$X_1$	$X_2$	$Y^*$
01-8	-1	-1	7.716
01-10	-1	0	7.677
01-12	-1	1	7.346
03-8	-0.2	-1	5.684
03-10	-0.2	0	5.552
03-12	-0.2	1	5.546
06-8	1	-1	4.081
06-10	1	0	4.126
06-12	1	1	3.758

\* Decimal logarithm of experimental  $R_s$ .

**Table S2.** Calculated and adjusted regression coefficients for the response surface model of Rs.

Regression coefficient	Calculated	Adjusted
b <sub>0</sub>	5.651	5.168
b <sub>1</sub>	-2.309	-1.800
b <sub>11</sub>	0.198	0.735
b <sub>12</sub>	0.018	-0.018
b <sub>2</sub>	-0.139	-0.192
b <sub>22</sub>	-0.097	-0.150

**Table S3.** Parameters of the Arrhenius equation for PBS hybrid nanocomposites.

Sample	$\lambda_0$ (W/mK)	E <sub>a</sub> (meV)
Ref	0.23	6.5
01-8	0.26	1.5
01-10	0.35	7.7
01-12	0.32	2.8
03-8	0.32	3.0
03-10	0.28	-1.4
03-12	0.32	3.0
06-8	0.38	7.4
06-10	0.38	7.0
06-12	0.40	6.7