



Supporting Information

for

Nanocasting synthesis of BiFeO₃ nanoparticles with enhanced visible-light photocatalytic activity

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Beilstein J. Nanotechnol. **2020**, *11*, 1822–1833. doi:10.3762/bjnano.11.164

Additional figures and tables

Table S1: Calcination paths.

Path	Reaction regarding: complexing agents, solvents, molar ratio-0	Reaction regarding molar ratio-1
Initial temperature (°C)	22	-
Heat rate 1 (°C/min)	1	-
Plateau 1 (°C)	200	-
Drying Time 1 (h)	2	-
Heat rate 2 (°C/min)	1	-
Plateau 2 (°C)	250	-
Drying Time 2 (h)	2	-
Heat rate 3 (°C/min)	4	4
Final Temperature (°C)	500	500
Final Calcination Time (h)	1	1

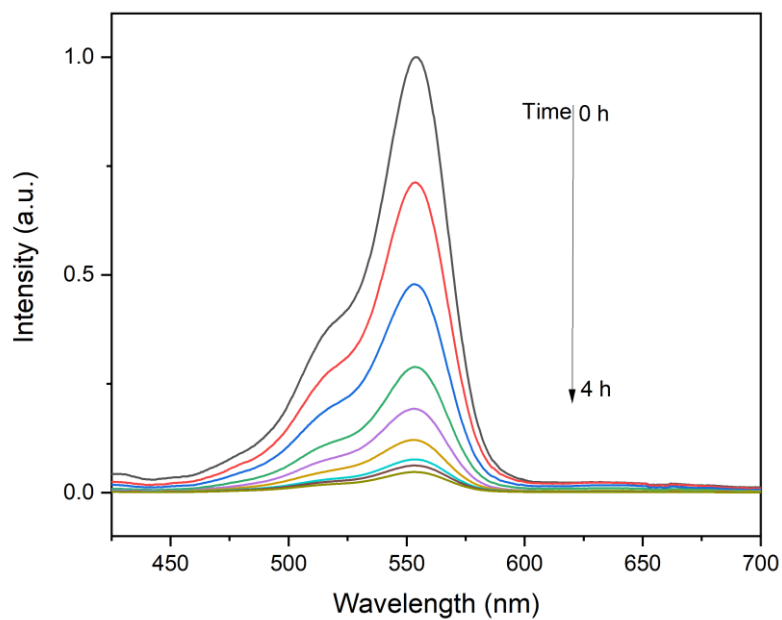


Figure S1: UV–vis spectra of Rhodamine B in dependence of irradiation time in the presence of 5.5 nm BiFeO₃ NP.

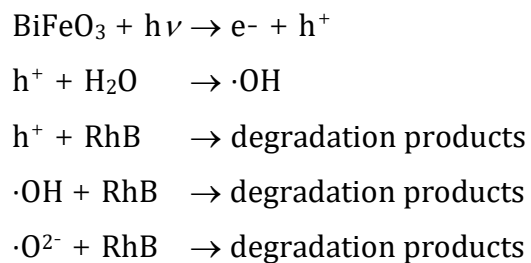


Figure S2: Photocatalytic mechanism of RhB degradation using 5.5 nm BiFeO₃ nanoparticles.

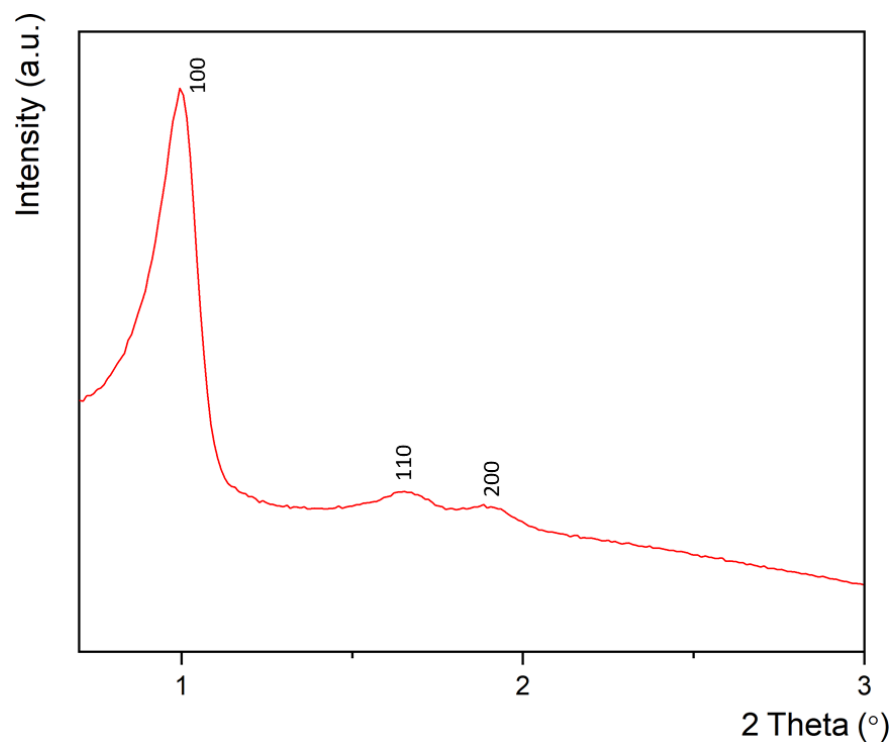


Figure S3: Small-angle XRD pattern of SBA-15.

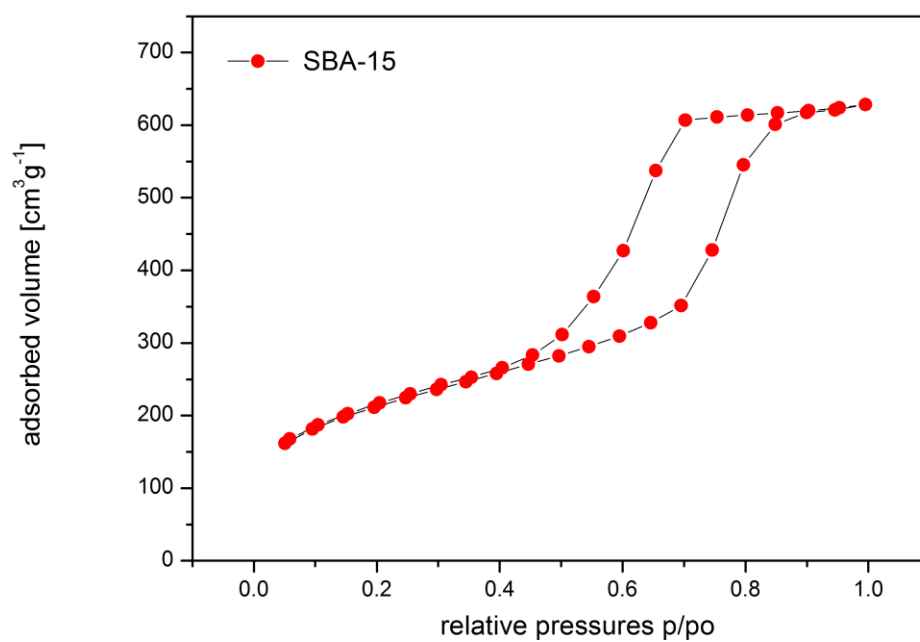


Figure S4: Nitrogen adsorption isotherms of SBA-15.

Table S2: Summary of BET analysis of SBA-15.

Pore Size	
Adsorption average pore diameter (4V/A by BET):	6.01773 nm
Desorption average pore diameter (4V/A by BET):	6.05495 nm
BJH Adsorption average pore diameter (4V/A):	6.2516 nm
BJH Desorption average pore diameter (4V/A):	5.8164 nm
D-H Adsorption average pore diameter (4V/A):	6.2643 nm
D-H Desorption average pore diameter (4V/A):	5.8198 nm

Surface Area	
Single point surface area at $P/P_0 = 0,3000000000$:	680.2137 m ² /g
BET Surface Area:	699.0213 m ² /g
Langmuir Surface Area:	3,573.7975 m ² /g
t-Plot Micropore Area:	33.0353 m ² /g
t-Plot external surface area:	665.9860 m ² /g
BJH Adsorption cumulative surface area of pores	
between 1.7000 nm and 300.0000 nm diameter:	651.433 m ² /g

BJH Desorption cumulative surface area of pores	
between 1.7000 nm and 300.0000 nm diameter:	716.5886 m ² /g
D-H Adsorption cumulative surface area of pores	
between 1.7000 nm and 300.0000 nm diameter:	647.872 m ² /g
D-H Desorption cumulative surface area of pores	
between 1.7000 nm and 300.0000 nm diameter:	714.5655 m ² /g

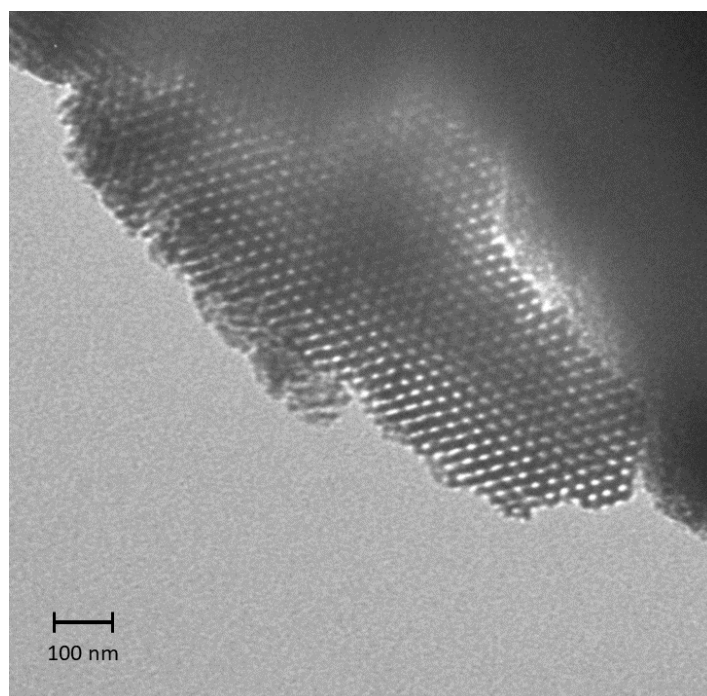


Figure S5: TEM image of SBA-15.



Figure S6: TEM image of BiFeO₃@SBA-15.

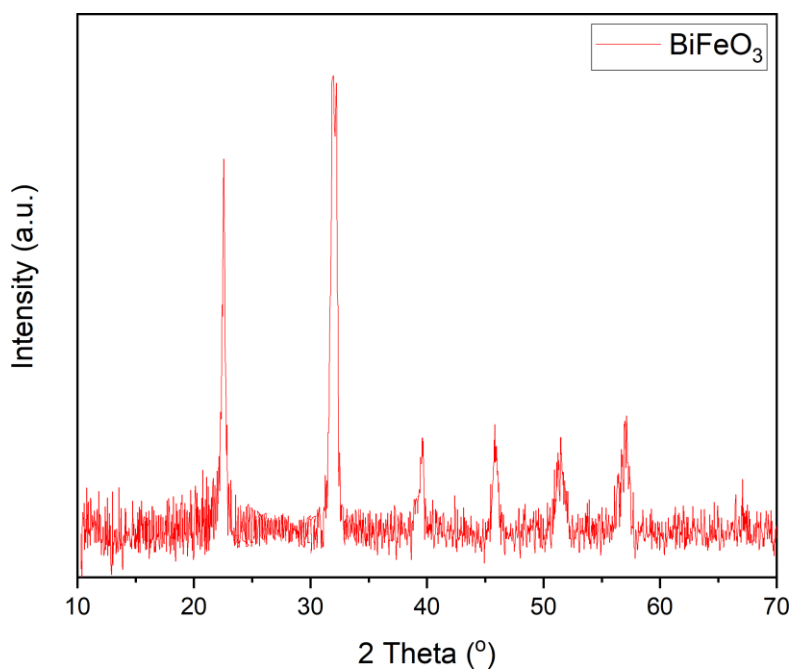


Figure S7: XRD pattern of 5.5 nm BiFeO₃ NP after 5 catalytic cycles.