Supplementary

Article

Effective Photocatalytic Activity of Mixed Ni/Fe-Base Metal-Organic Framework under a Compact Fluorescent Daylight Lamp

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Table S1. Synthetic parameters of MIL-53(Fe) and Ni/Fe-MOF samples.

Sample no.	$n_{Fe^{3+}}$ (mmol)	$n_{Ni^{2+}}$ (mmol)	n_{TPA} (mmol)	V_{DMF} (mL)	Ni/Fe (theorical)	Ni/Fe (EDS)	Ni/Fe (XPS)
MIL-53(Fe)	6.00	-	9.00	60	-	-	-
Ni/Fe-MOF-0.1	5.40	0.60	9.00	60	0.10	0.16	-
Ni/Fe-MOF-0.3	4.20	1.80	9.00	60	0.30	0.30	0.26
Ni/Fe-MOF-0.5	3.00	3.00	9.00	60	0.50	0.48	-
Ni/Fe-MOF-0.7	1.80	4.20	9.00	60	0.70	0.66	-

Table S2. Product data of a 40 W compact fluorescent lamp. (Source:

http://www.assets.lighting.philips.com/is/content/PhilipsLighting/fp929689844999-pss-global).

| General Information		Operating and Electrical	
Cap-Base	E27 [E27]	Input Frequency	50 or 60 Hz
Light Technical		Power (Rated) (Nom)	70 W
Color Code	865 [CCT of 6500K]	Lamp Current (Nom)	312 mA
Luminous Flux (Nom)	4400 lm	Power Factor (Nom)	0.6
Color Designation	Cool Daylight	Voltage (Nom)	220-240 V
Lumen Maintenance 2000 h (Nom)	85 %	**Product Data**	
Lumen Maintenance 5000 h (Nom)	75 %	Full product code	692341076895400
Chromaticity Coordinate X (Nom)	313	Order product name	ESSENTIAL 70W CDL E27 220-240V 1CC/6
Chromaticity Coordinate Y (Nom)	337	EAN/UPC - Product	6923410768954
Correlated Color Temperature (Nom)	6500 K	Order code	929689844999
Luminous Efficacy (rated) (Nom)	63 lm/W	Numerator - Quantity Per Pack	1
Color Rendering Index (Min)	80	Numerator - Packs per outer box	6
LLMF At End Of Nominal Lifetime (Min)	65 %	Material Nr. (12NC) Net Weight (Piece)	929689844999 0.440 kg
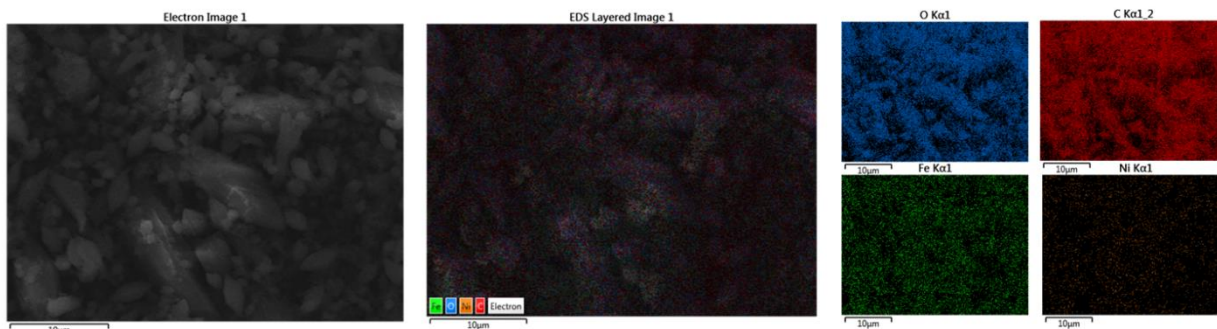
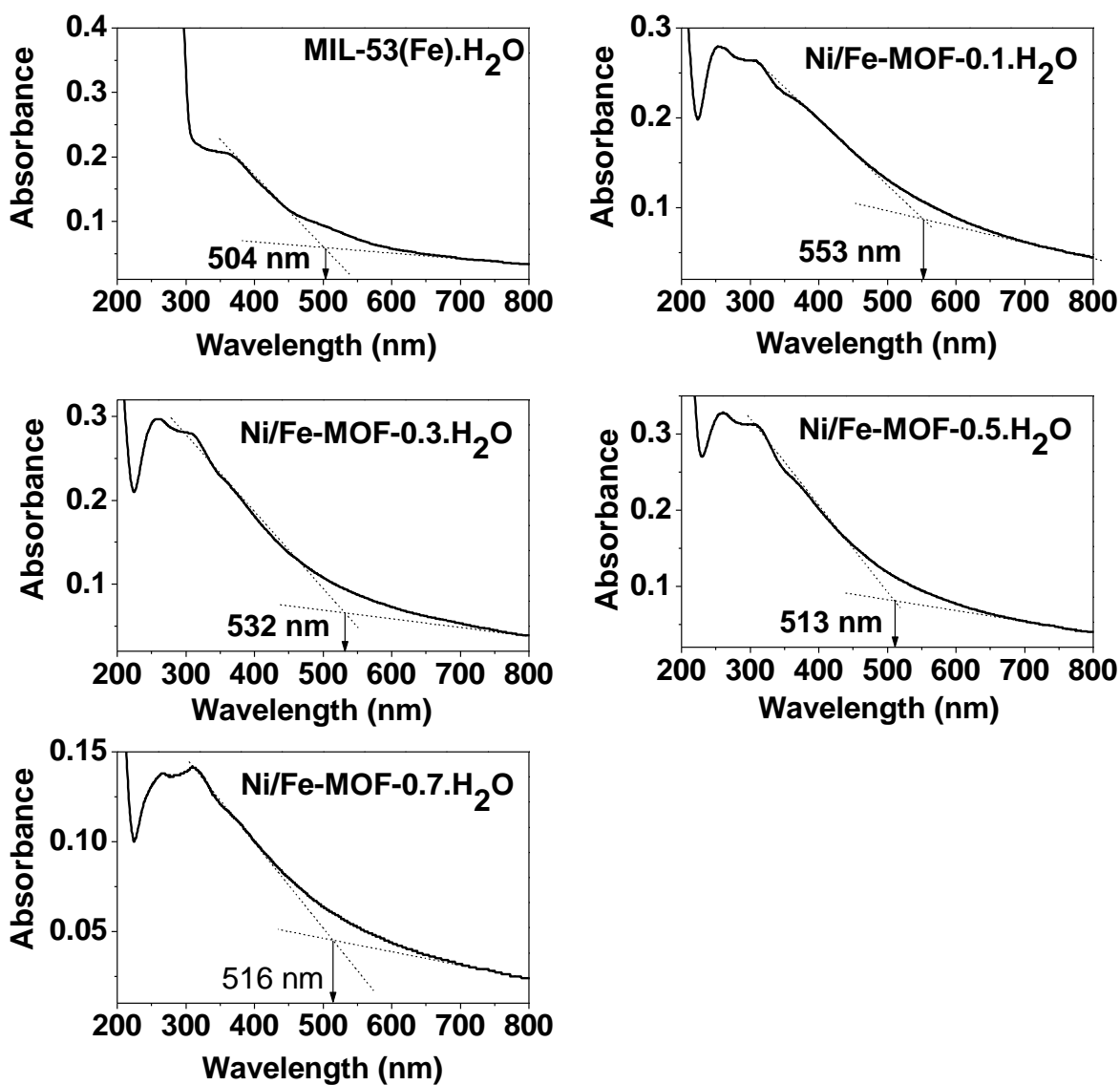**Figure S1.** EDS mapping of Ni/Fe-MOF-0.3 sample.

Figure S2. UV-vis DRS spectra of as-prepared MIL-53(Fe) and Ni-MIL-53(Fe) crystals isolated from H_2O.
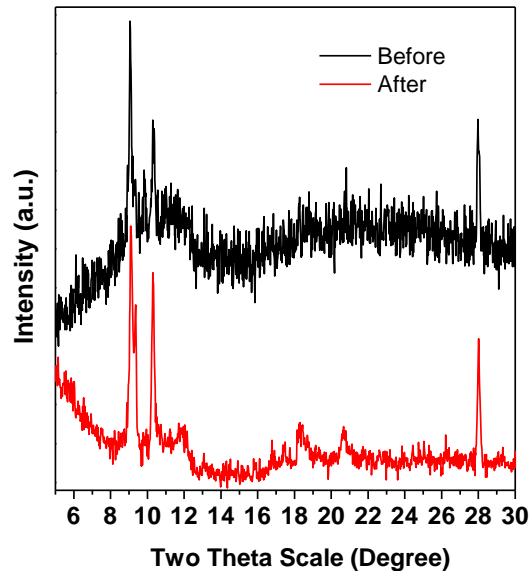
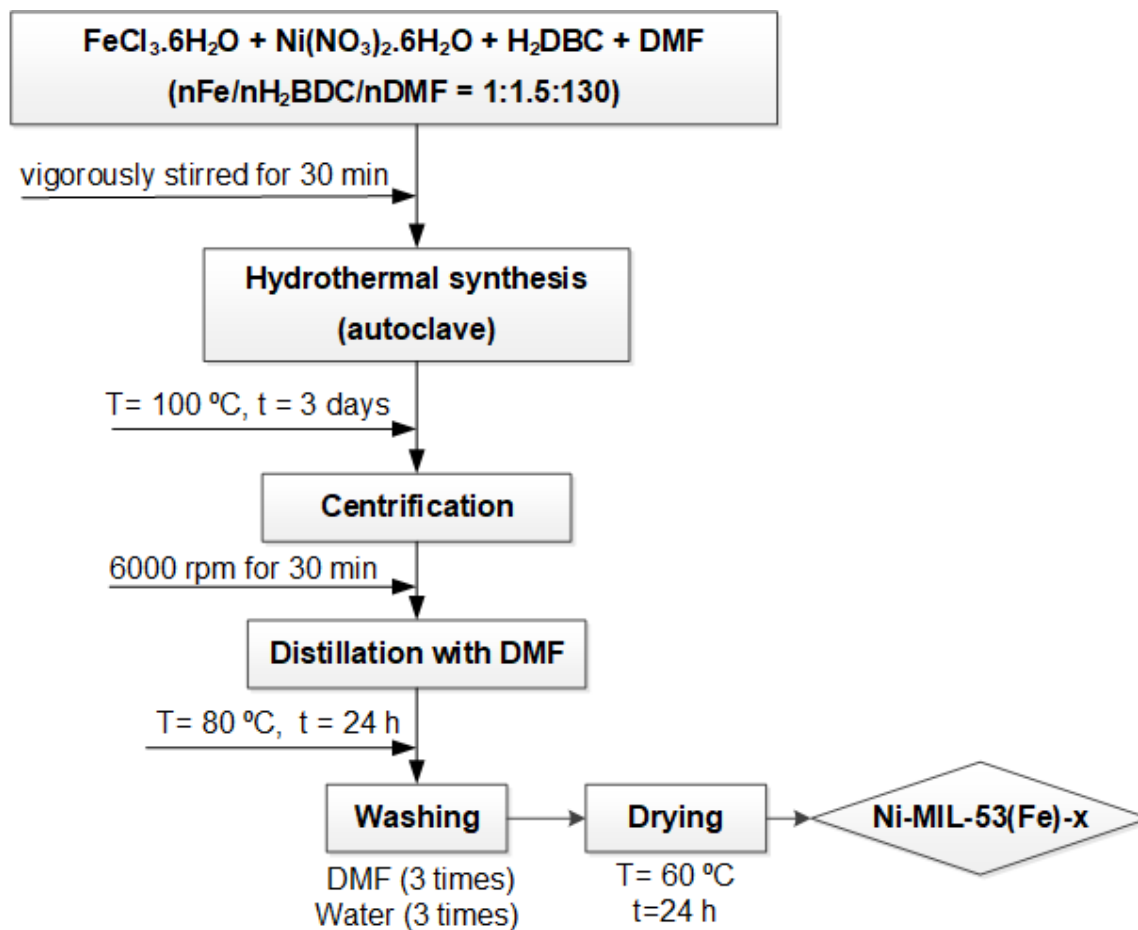**Figure S3.** XRD patterns of Ni/Fe-MOF-0.3 before and after reactions.

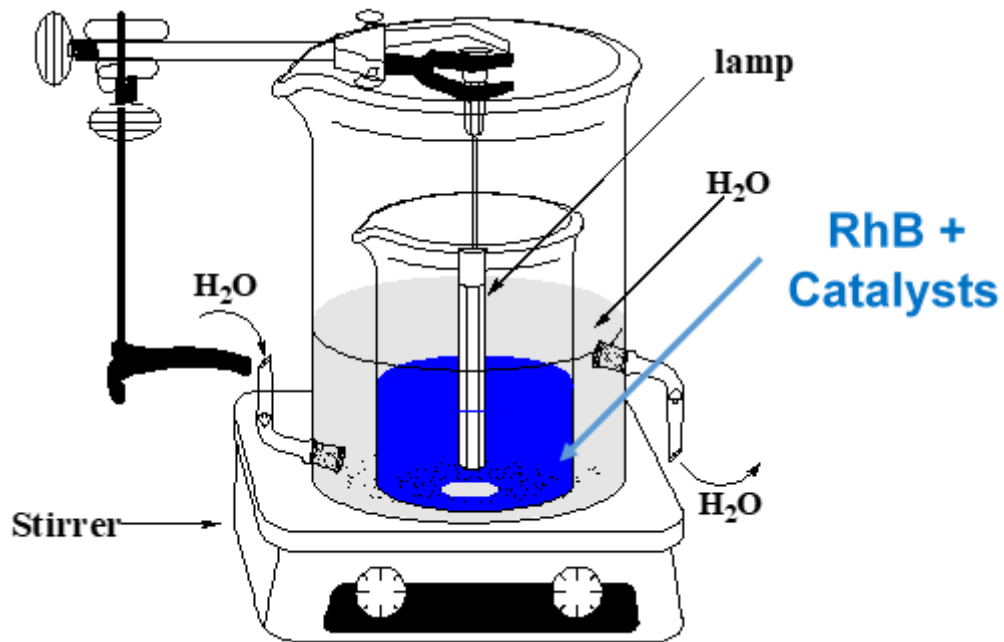**Figure S4.** The flow chart of the synthesis method.

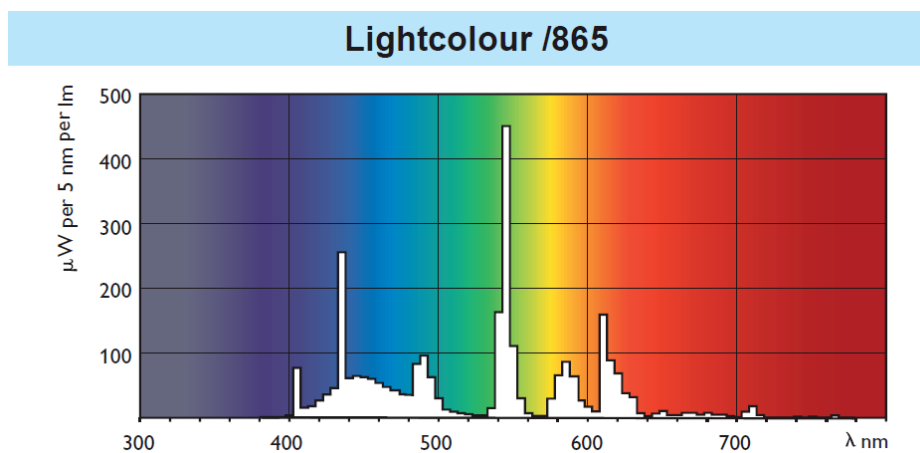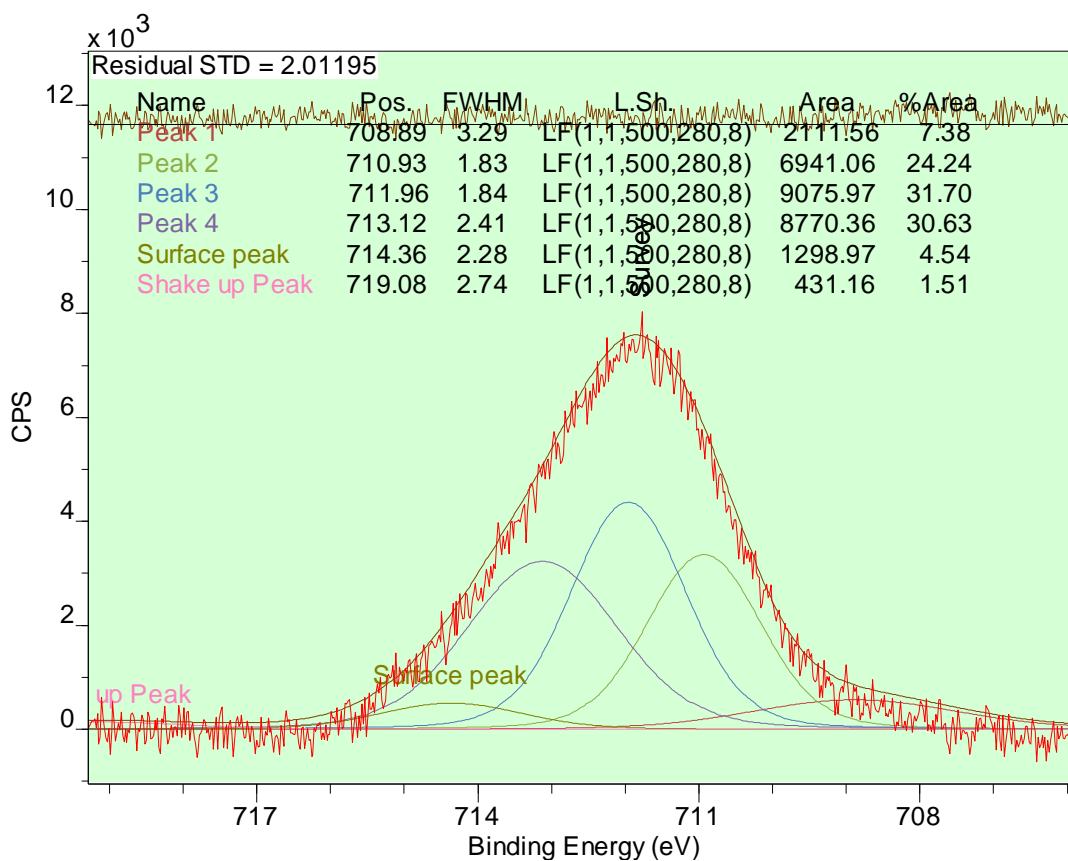Figure S5: Illustration of the utilized photocatalytic test system

Figure S6. The spectral distribution of a 40 W compact fluorescent lamp (Source: https://www.interlight.biz/Catalogs/Philips/Philips%202010%20European%20Lamps.pdf).
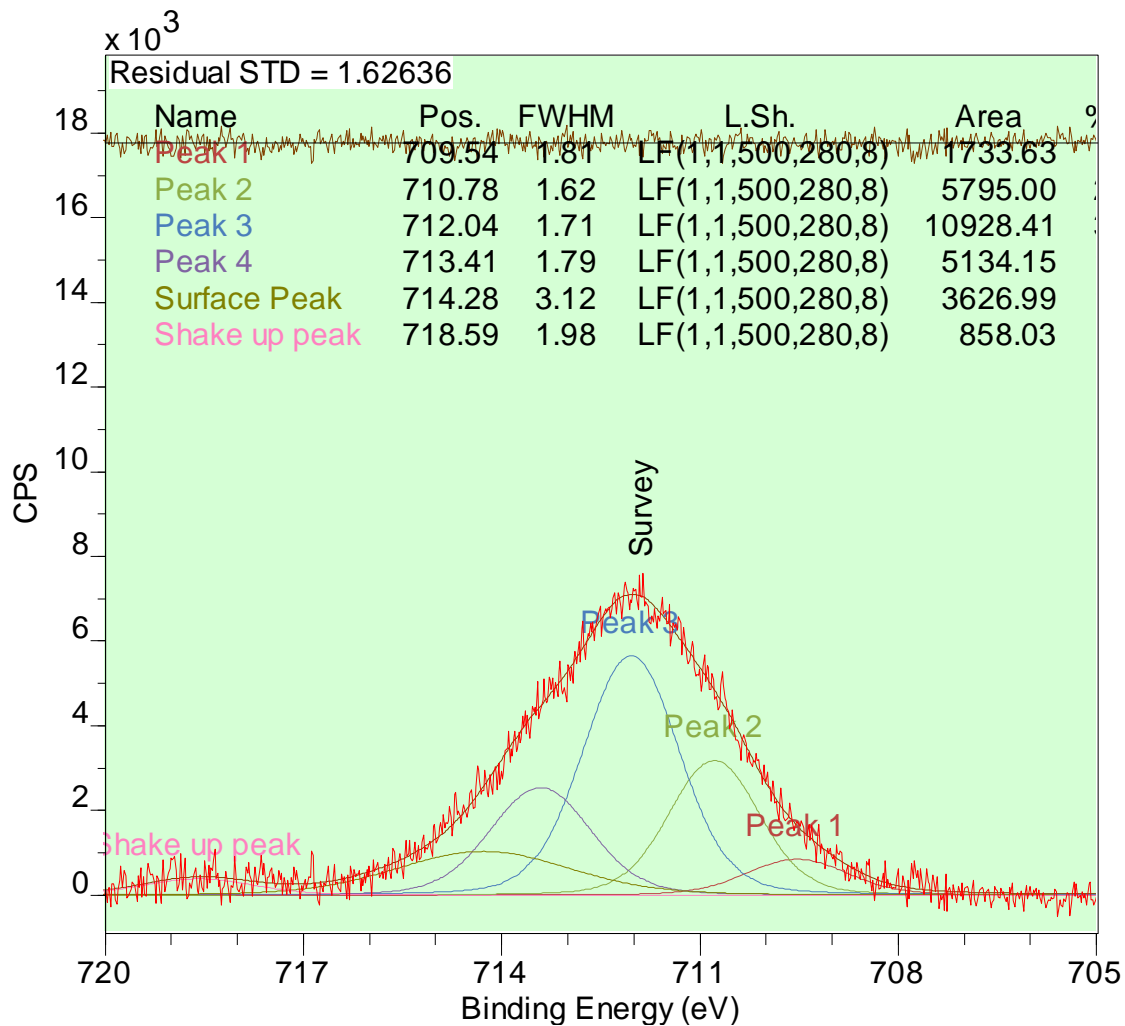
fe-nife mil.txt

Figure S7. Background-subtracted Fe $2p_{3/2}$ spectrum from Ni/Fe-MOF-0.3.

The figure contains the following annotations:

Residual STD = 2.01195

Name	Pos.	FWHM	L.Sh.	Area	%Area
Peak 1	708.89	3.29	LF(1,1,500,280,8)	2111.56	7.38
Peak 2	710.93	1.83	LF(1,1,500,280,8)	6941.06	24.24
Peak 3	711.96	1.84	LF(1,1,500,280,8)	9075.97	31.70
Peak 4	713.12	2.41	LF(1,1,500,280,8)	8770.36	30.63
Surface peak	714.36	2.28	LF(1,1,500,280,8)	1298.97	4.54
Shake up Peak	719.08	2.74	LF(1,1,500,280,8)	431.16	1.51

CasaXPS (This string can be edited in CasaXPS.DEF/PrintFootNote.txt)

Figure S8. Background-subtracted Fe 2p$_{3/2}$ spectrum from MIL-53(Fe).