

## Supporting Information

### Low-temperature synthesis of porous organic polymers with donor-acceptor structure and $\beta$ -ketoenamine for photocatalytic oxidative coupling of amines

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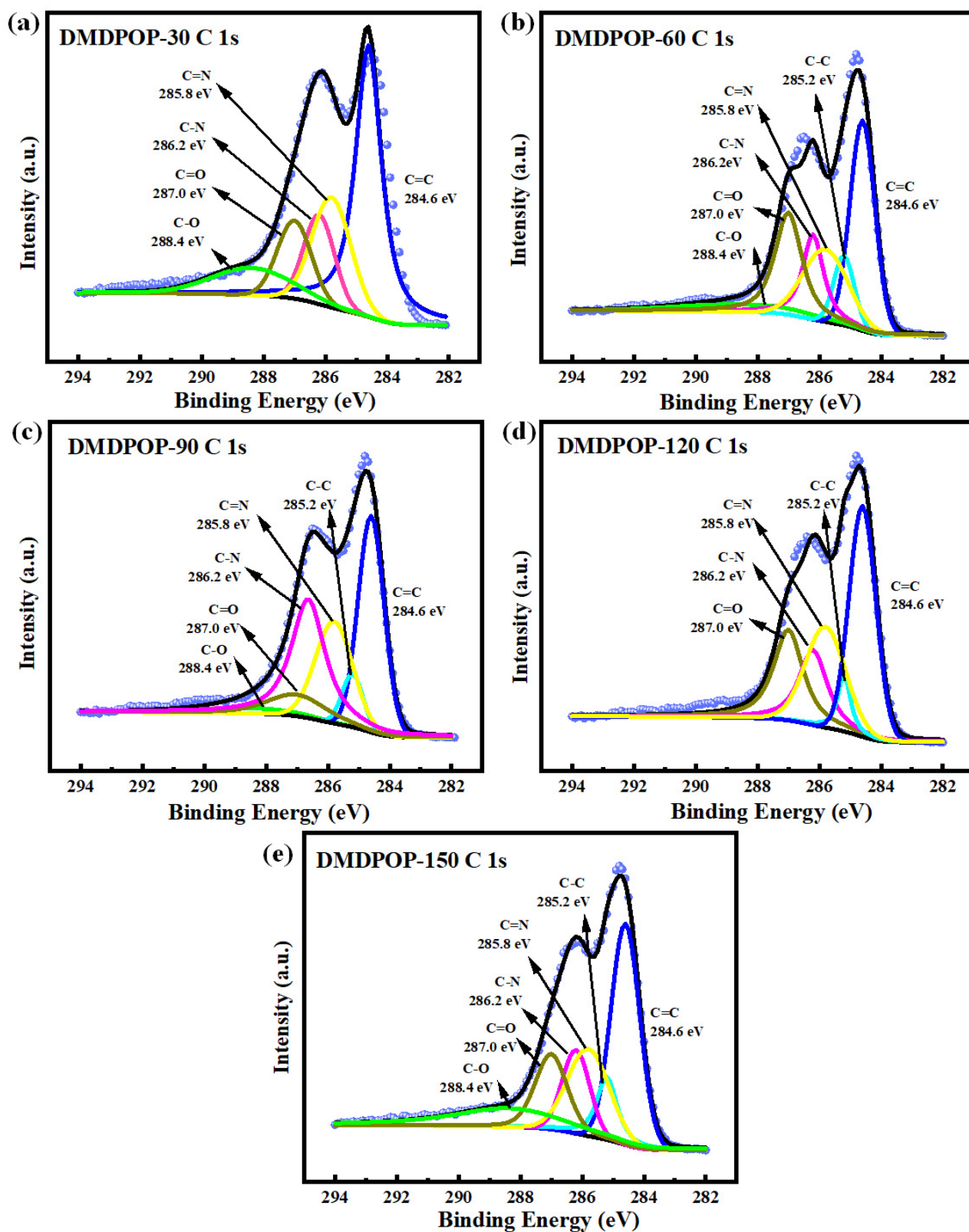


Figure S1. C 1s XPS spectra of DMDPOP-X samples.

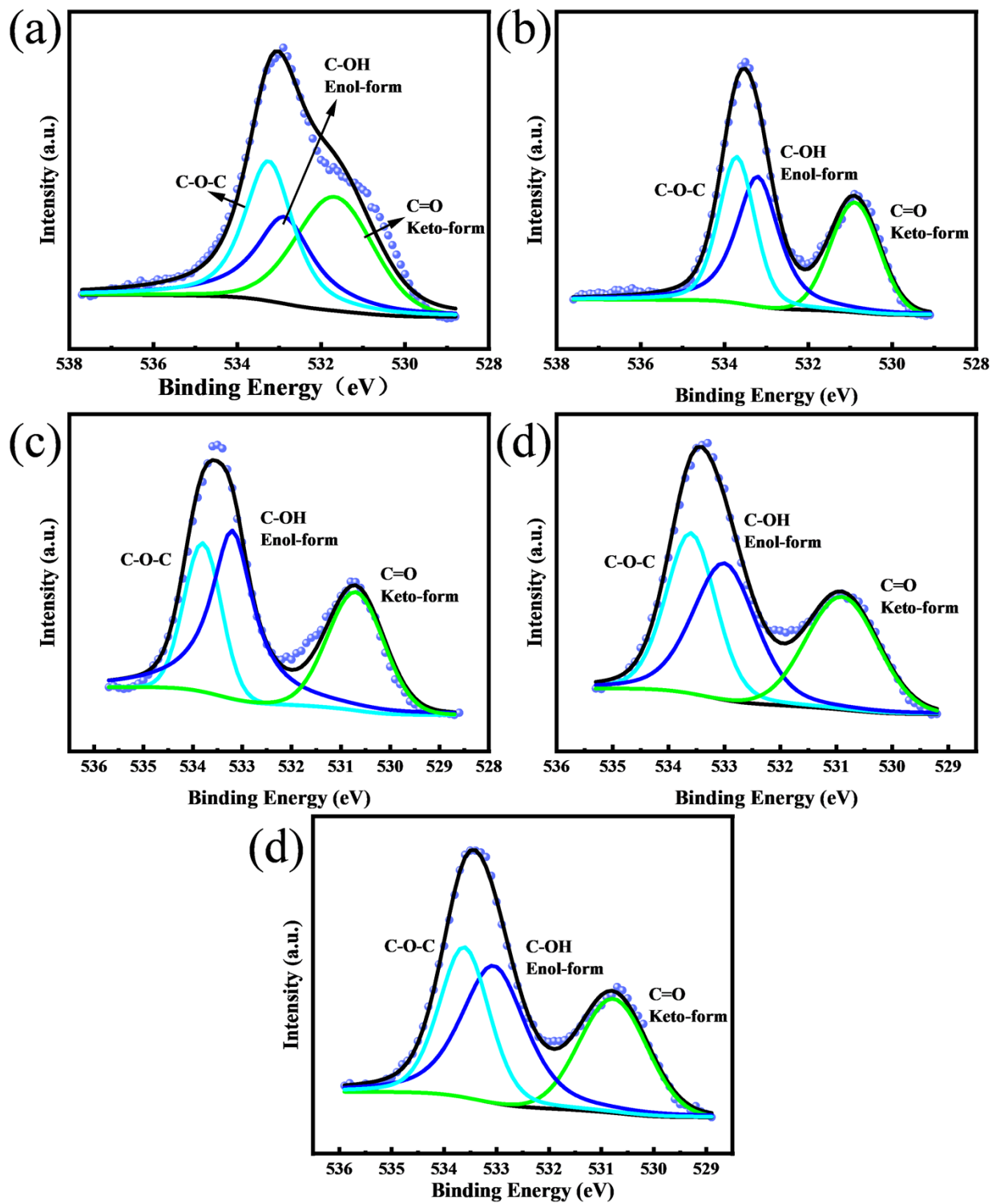
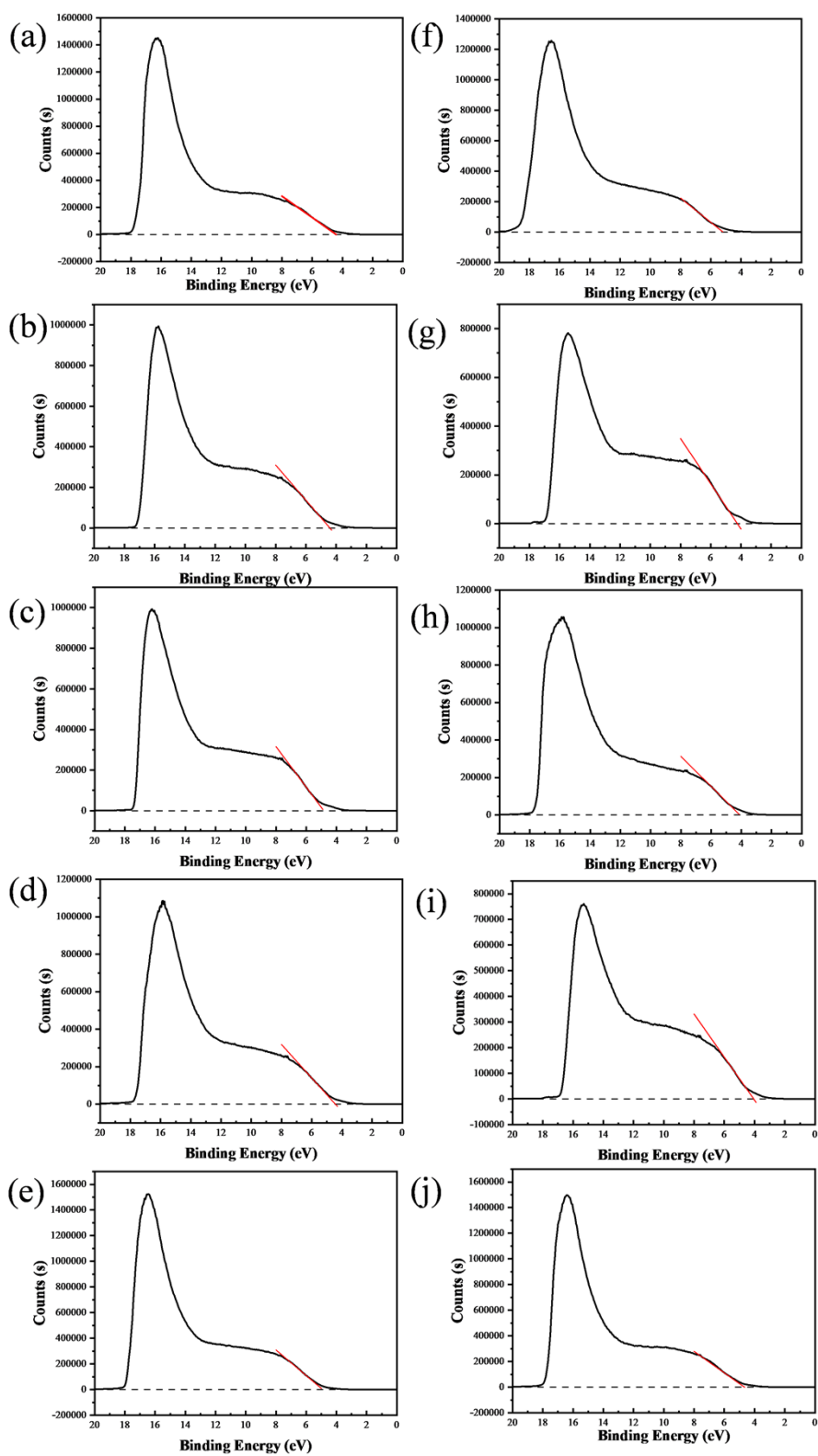
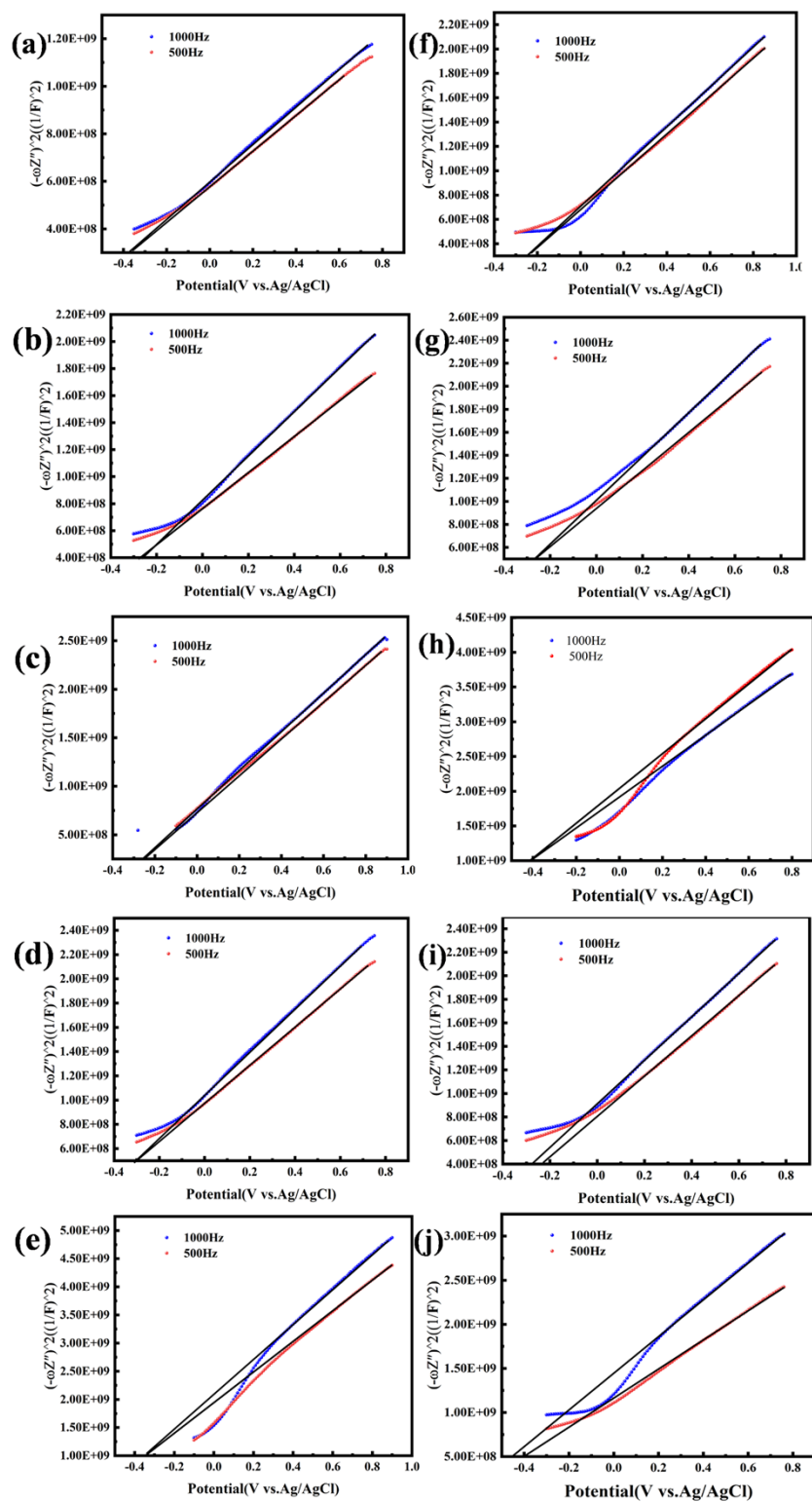


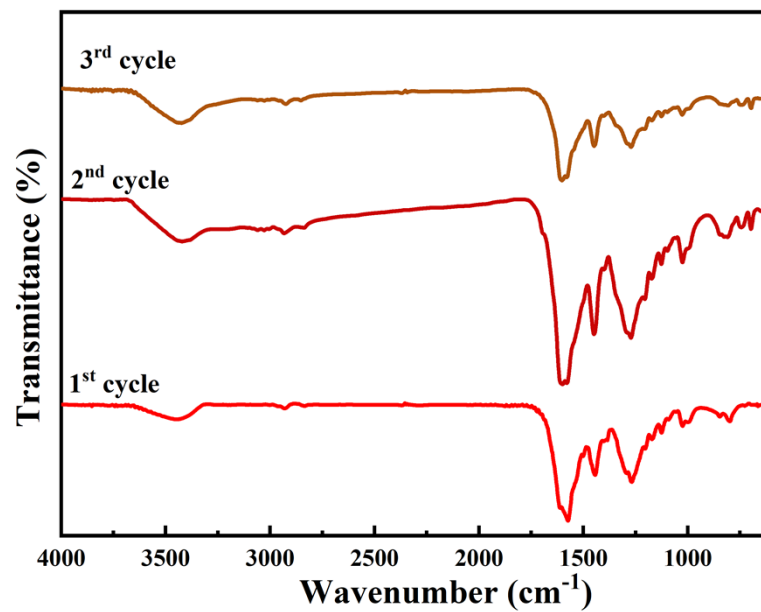
Figure S2. O 1s XPS spectra of DMDPOP-X samples.



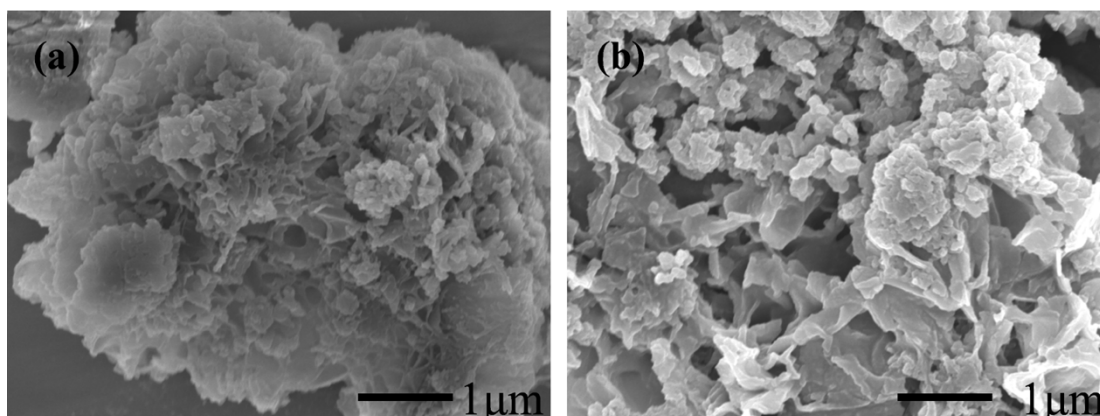
**Figure S3.** UPS plots of DMDPOP-30 (a), DMDPOP-60 (b), DMDPOP-90 (c), DMDPOP-120 (d), DMDPOP-150 (e), DHDPOP-30 (f), DHDPOP-60 (g), DHDPOP-90 (h), DHDPOP-120 (i) and DHDPOP-150 (j)



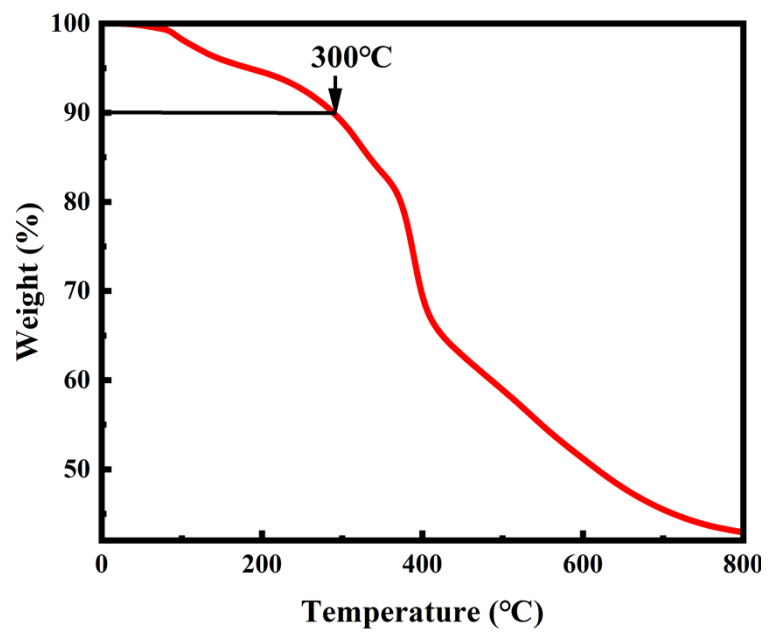
**Figure S4.** Mott–Schottky plots of DMDPOP-30 (a), DMDPOP-60 (b), DMDPOP-90 (c), DMDPOP-120 (d), DMDPOP-150 (e), DHDPOP-30 (f), DHDPOP-60 (g), DHDPOP-90 (h), DHDPOP-120 (i) and DHDPOP-150 (j) at 1000 Hz and 500 Hz.



**Figure S5.** FT-IR spectra of DMDPOP-30 after recycle experiment.



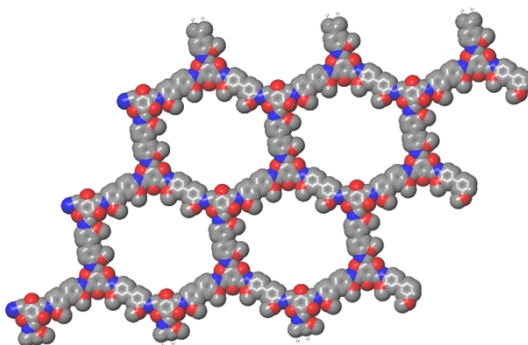
**Figure S6.** SEM spectra of DMDPOP-30 after 2<sup>nd</sup> recycle (a) and 3<sup>rd</sup> recycle experiment (b).



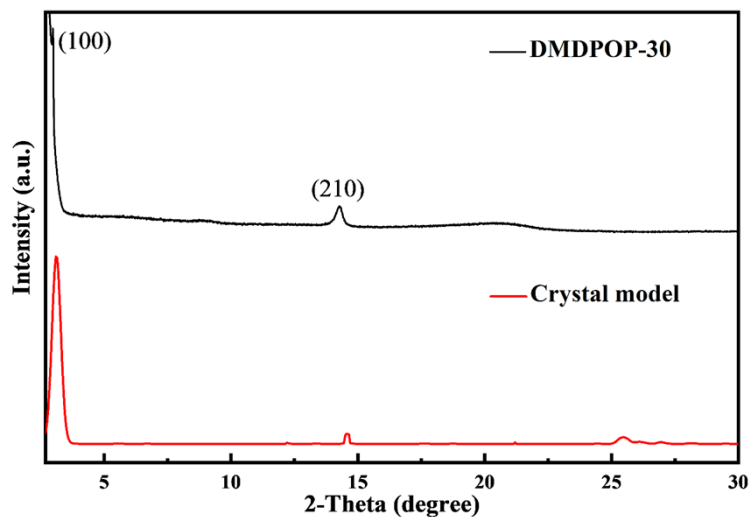
**Figure S7.** TGA curve of DMDPOP-30 under N<sub>2</sub>.

**Table S1.** The crystal plane of Materials Studio crystal and its corresponding 2theta value were simulated.

**Crystal model :**



**XRD Comparison Between Simulation Model and Experimental Data :**



h	k	l	2theta		h	k	l	2theta		h	k	l	2theta
0	1	0	3.117749		4	2	0	17.79191		0	0	1	25.39547
1	1	0	3.117749		6	#	0	17.79191		0	1	1	25.56331
1	0	0	3.11775		6	#	0	17.79191		0	1	1	25.56331
0	1	0	3.126206		2	1	0	17.8372		1	#	1	25.56331
1	1	0	3.126207		4	#	0	17.8372		1	#	1	25.56331
1	0	0	3.126207		2	4	0	17.8372		1	0	1	25.56331



1	2	0	5.610362		4	2	0	17.8372		1	0	1	25.56331
1	1	0	5.610363		6	#	0	17.8372		1	#	0	25.61856
2	1	0	5.610363		6	#	0	17.8372		1	7	0	25.61856
1	2	0	5.625024		1	#	0	18.74413		7	#	0	25.61856
1	1	0	5.625024		1	5	0	18.74413		8	#	0	25.61856
2	1	0	5.625025		5	#	0	18.74413		7	1	0	25.61856
0	2	0	6.523363		6	#	0	18.74413		8	#	0	25.61856
2	2	0	6.523363		5	1	0	18.74413		0	1	1	25.62863
2	0	0	6.523363		6	#	0	18.74413		0	1	1	25.62863
0	2	0	6.5403		1	#	0	18.79185		1	#	1	25.62863
2	2	0	6.5403		1	5	0	18.79185		1	#	1	25.62863
2	0	0	6.5403		5	#	0	18.79185		1	0	1	25.62863
1	3	0	8.725562		6	#	0	18.79185		1	0	1	25.62863
2	3	0	8.725562		5	1	0	18.79185		1	#	0	25.68403
1	2	0	8.725562		6	#	0	18.79185		1	7	0	25.68403
2	1	0	8.725563		0	6	0	20.2366		7	#	0	25.68403
3	2	0	8.725563		6	#	0	20.2366		8	#	0	25.68404
3	1	0	8.725563		6	0	0	20.2366		7	1	0	25.68404
1	3	0	8.747998		0	6	0	20.28814		8	#	0	25.68404
2	3	0	8.747998		6	#	0	20.28814		1	#	1	26.02266
1	2	0	8.747998		6	0	0	20.28814		1	#	1	26.02266
2	1	0	8.747998		3	#	0	20.52276		1	1	1	26.02266
3	2	0	8.747999		4	#	0	20.52276		1	1	1	26.02266
3	1	0	8.747999		3	4	0	20.52276		2	#	1	26.02266
0	3	0	9.935012		4	3	0	20.52276		2	#	1	26.02266
3	3	0	9.935013		7	#	0	20.52276		1	#	1	26.08919
3	0	0	9.935013		7	#	0	20.52276		1	#	1	26.08919
0	3	0	9.960474		3	#	0	20.57503		1	1	1	26.08919
3	3	0	9.960475		4	#	0	20.57503		1	1	1	26.08919
3	0	0	9.960475		3	4	0	20.57504		2	#	1	26.08919
2	4	0	11.52125		4	3	0	20.57504		2	#	1	26.08919
2	2	0	11.52125		7	#	0	20.57504		0	2	1	26.24956
4	2	0	11.52125		7	#	0	20.57504		0	2	1	26.24956
2	4	0	11.55069		2	#	0	21.08408		2	#	1	26.24956
2	2	0	11.55069		5	#	0	21.08408		2	#	1	26.24956
4	2	0	11.55069		2	5	0	21.08408		2	0	1	26.24956
1	4	0	12.00514		5	2	0	21.08408		2	0	1	26.24956
1	3	0	12.00514		7	#	0	21.08408		0	2	1	26.31668
3	4	0	12.00514		7	#	0	21.08409		0	2	1	26.31668
4	3	0	12.00514		2	#	0	21.1378		2	#	1	26.31668
3	1	0	12.00514		5	#	0	21.1378		2	#	1	26.31668

4	1	0	12.00514		2	5	0	21.1378		2	0	1	26.31668
1	4	0	12.0358		5	2	0	21.1378		2	0	1	26.31668
1	3	0	12.0358		7	#	0	21.1378		4	#	0	26.52818
3	4	0	12.0358		7	#	0	21.1378		5	#	0	26.52818
4	3	0	12.0358		1	#	0	22.16656		4	5	0	26.52818
3	1	0	12.0358		1	6	0	22.16656		5	4	0	26.52818
4	1	0	12.0358		6	#	0	22.16656		9	#	0	26.52818
0	4	0	13.3557		7	#	0	22.16656		9	#	0	26.52818
4	4	0	13.3557		6	1	0	22.16656		4	#	0	26.59603
4	0	0	13.3557		7	#	0	22.16656		5	#	0	26.59603
0	4	0	13.38976		1	#	0	22.22306		4	5	0	26.59604
4	4	0	13.38976		1	6	0	22.22306		5	4	0	26.59604
4	0	0	13.38976		6	#	0	22.22306		9	#	0	26.59604
2	5	0	14.58617		7	#	0	22.22306		9	#	0	26.59604
3	5	0	14.58617		6	1	0	22.22306		1	#	1	26.91971
2	1	0	14.58617		7	#	0	22.22306		1	#	1	26.91971
3	2	0	14.58618		4	#	0	23.4537		2	#	1	26.91971
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2	5	0	14.62333		4	#	0	23.51353		1	2	1	26.91971
3	5	0	14.62333		4	4	0	23.51354		2	1	1	26.91971
2	3	0	14.62333		8	#	0	23.51354		2	1	1	26.91971
3	2	0	14.62333		3	#	0	23.70329		3	#	1	26.91971
5	3	0	14.62334		0	7	0	23.70329		3	#	1	26.91971
5	2	0	14.62334		5	#	0	23.70329		3	#	1	26.91971
1	5	0	15.3539		3	5	0	23.70329		3	#	1	26.91971
1	4	0	15.3539		7	#	0	23.70329		3	#	0	26.97241
4	5	0	15.3539		5	3	0	23.70329		6	#	0	26.97241
5	4	0	15.3539		8	#	0	23.70329		3	6	0	26.97241
4	1	0	15.3539		7	0	0	23.70329		6	3	0	26.97241
5	1	0	15.3539		8	#	0	23.70329		9	#	0	26.97241
1	5	0	15.393		3	#	0	23.76377		9	#	0	26.97241
1	4	0	15.393		0	7	0	23.76377		1	#	1	26.9886
4	5	0	15.393		5	#	0	23.76377		1	#	1	26.9886
5	4	0	15.393		3	5	0	23.76377		2	#	1	26.9886
4	1	0	15.393		7	#	0	23.76377		2	#	1	26.9886
5	1	0	15.393		5	3	0	23.76377		1	2	1	26.9886
0	5	0	16.78851		8	#	0	23.76377		1	2	1	26.9886
5	5	0	16.78851		7	0	0	23.76377		2	1	1	26.9886
5	0	0	16.78851		8	#	0	23.76377		2	1	1	26.9886
0	5	0	16.83124		2	#	0	24.43781		3	#	1	26.9886

5	5	0	16.83125		2	6	0	24.43782		3	#	1	26.9886
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3	6	0	17.46355		8	#	0	24.43782		3	#	1	26.9886
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6	3	0	17.46355		8	#	0	24.43782		6	#	0	27.04143
3	6	0	17.50801		2	#	0	24.50021		3	6	0	27.04143
3	3	0	17.50801		2	6	0	24.50021		6	3	0	27.04143
6	3	0	17.50801		6	#	0	24.50021		9	#	0	27.04143
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4	6	0	17.79191		6	2	0	24.50021		0	8	0	27.19203
2	4	0	17.79191		8	#	0	24.50021		8	#	0	27.19203
					0	0	1	25.33075		8	0	0	27.19204