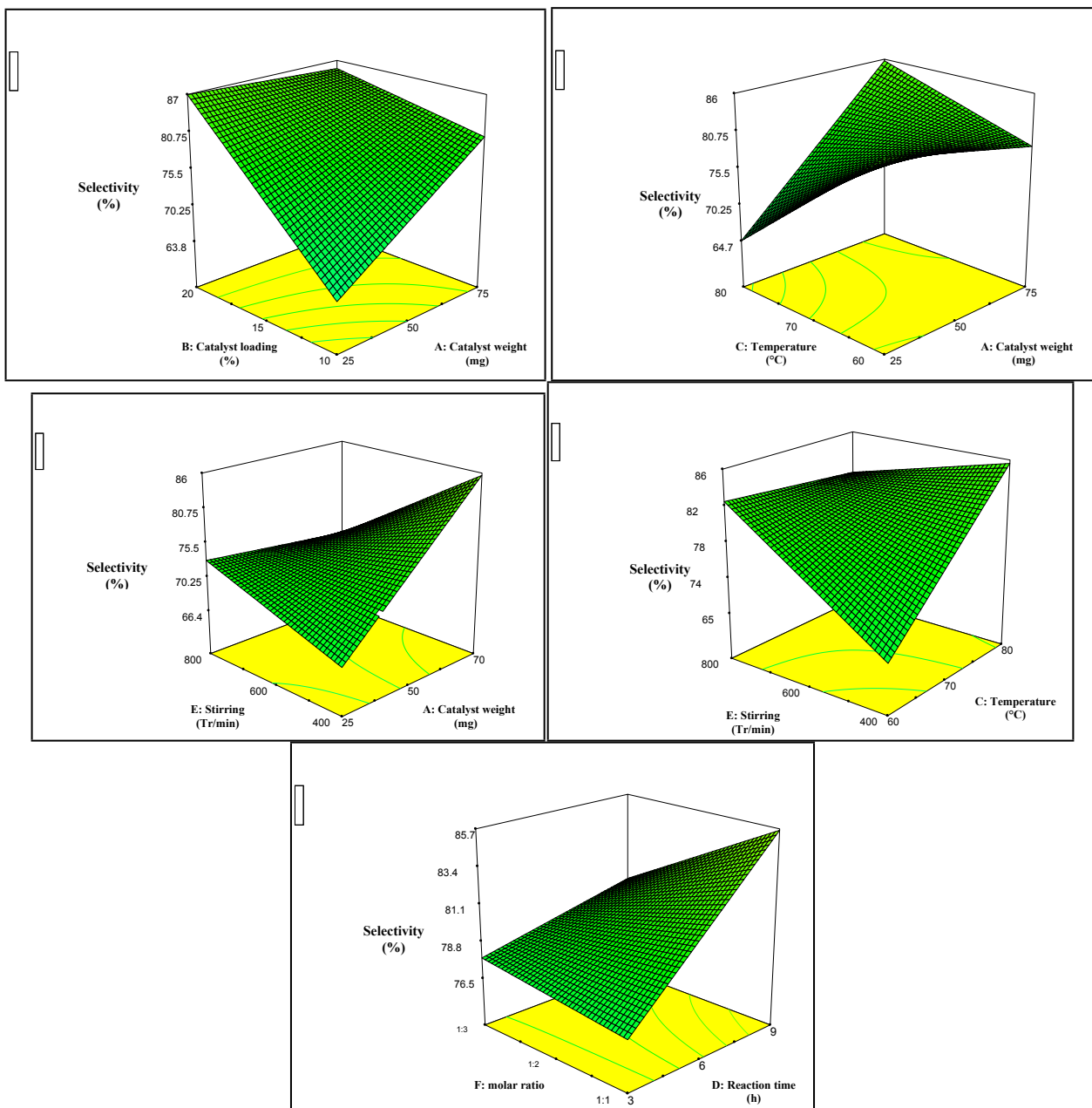


Figure S1. 3D surface plots for cyclohexene conversion as function of six factors.



**Figure S2.** Scheme 3D surface plots for the selectivity of cyclohexene oxide as function of six factors.

**Table S1.** Analysis of variance (ANOVA) for selected fractional factorial model for the responses

Factors	Sum of squares		Df [a]	Mean square		F		p-value	
	Y1	Y2		Y1	Y2	Y1	Y2	Y1	Y2
Model	5357.32683	1955.51285	18	297.629268	85.0222977	10.8520193	38.0243365	< 0.0001	< 0.0001
A	405.626403	44.1095281	1	405.626403	44.1095281	14.7897604	19.7270079	0.0020	0.0022
B	84.3375781	150.988753	1	84.3375781	150.988753	3.07507736	67.5263704	0.1030	< 0.0001
C	29.7027781	22.8657031	1	29.7027781	22.8657031	1.08300882	10.2261785	0.3170	0.0127
D	3873.54015	613.287753	1	3873.54015	613.287753	141.235211	274.279343	< 0.0001	< 0.0001
E	1.66075313	7.04062813	1	1.66075313	7.04062813	0.0605536	3.14876474	0.8095	0.1139
F	284.232403	426.247003	1	284.232403	426.247003	10.3635491	190.629516	0.0067	< 0.0001
AB	448.426378	60.8580281	1	448.426378	60.8580281	16.3503131	27.217403	0.0014	0.0008
AC	0.13650312	114.420628	1	0.13650312	114.420628	0.00497711	51.1720877	0.9448	< 0.0001
AD	10.2265031	0.29837813	1	10.2265031	0.29837813	0.37287398	0.133443	0.5520	0.7244
AE	0.05865313	68.3572781	1	0.05865313	68.3572781	0.00213858	30.5712762	0.9638	0.0006
AF	6.31012813	8.35382813	1	6.31012813	8.35382813	0.23007694	3.73606431	0.6394	0.0893
BC	127.560378	54.7842781	1	127.560378	54.7842781	4.6510469	24.5010531	0.0503	0.0011
BD	4.43275313	4.38820313	1	4.43275313	4.38820313	0.16162497	1.9625265	0.6942	0.1988
BE	1.15140312	4.76632813	1	1.15140312	4.76632813	0.04198192	2.13163452	0.8408	0.1824
BF	40.1184031	2.54815313	1	40.1184031	2.54815313	1.46277847	1.13960496	0.2480	0.3169
CE	0.16387813	33.3540281	1	0.16387813	33.3540281	0.00597525	14.9168492	0.9396	0.0048
DE	21.1737781	19.9554031	1	21.1737781	19.9554031	0.7720284	8.92461137	0.3955	0.0174
EF	18.4680031	2.21025313	1	18.4680031	2.21025313	0.6733717	0.98848668	0.4267	0.3492
Residual	356.540141	17.887975	13	27.4261647	2.23599688				
Cor Total	5713.86697	1973.40082	31						

Df: degree of freedom; Y<sub>1</sub>: R<sup>2</sup>= 0.9197, R<sup>2</sup> adjusted = 0.8869; Y<sub>2</sub>: R<sup>2</sup>= 0.9843, R<sup>2</sup> adjusted =0.9557

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**Table S2.** Oxidation of cyclohexene using different catalysts <sup>[a]</sup>.

Variables	Conversion (Y1)	Selectivity (Y2)
	Coefficient	coefficient
Constant	59.07	68.6116
A	3.56	1.1741
B	1.62	2.1722
C	-0.96	-0.8453
D	11.00	4.3778
E	0.23	-0.4691
F	2.98	-3.6497
AB	-3.74	-1.3791
AC	-0.07	1.8909
AD	0.57	0.0966
AE	-0.04	-1.4616
AF	-0.44	-0.5109
BC	2.00	-1.3084
BD	0.37	-0.3703
BE	-0.19	-0.3859
BF	-1.12	0.2822
CE	-0.07	-1.0209
DE	-0.81	0.7897
EF	0.76	-0.2628

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