

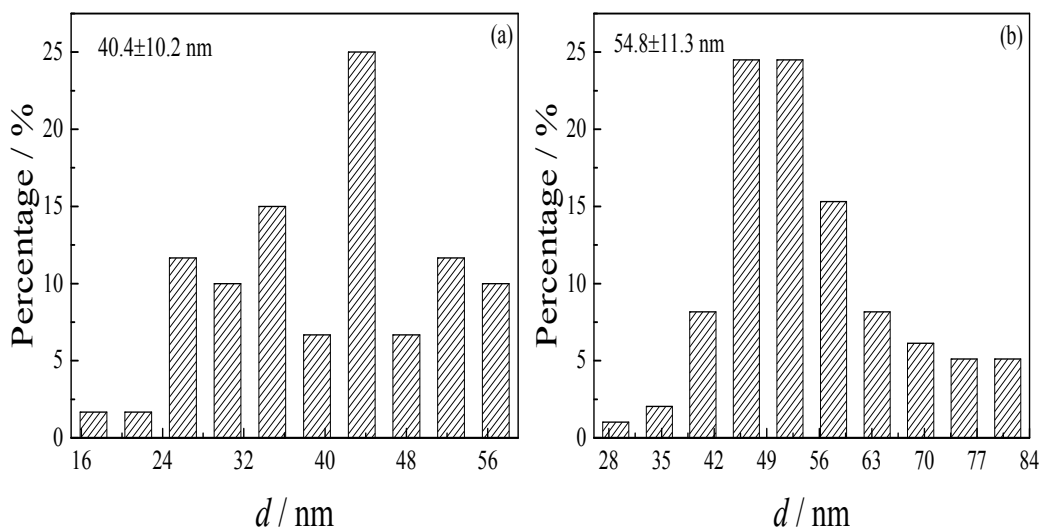
Size and Shape Dependences of Adsorption Kinetics of Malachite Green on Nano-MgO: a Theoretical and Experimental Study

Zixiang Cui*, Jiayi Liu, Huifang Gao, Yongqiang Xue*, Jie Hao, Rong
Zhang, Boteng Ji, Jiaojiao Chen

Department of Chemistry, Taiyuan University of Technology, 030024
Taiyuan, P. R. China

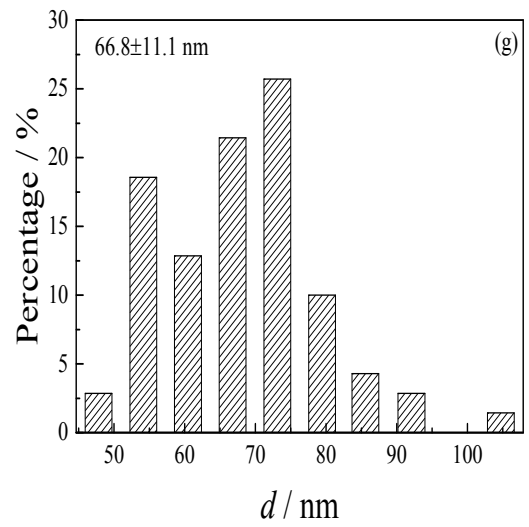
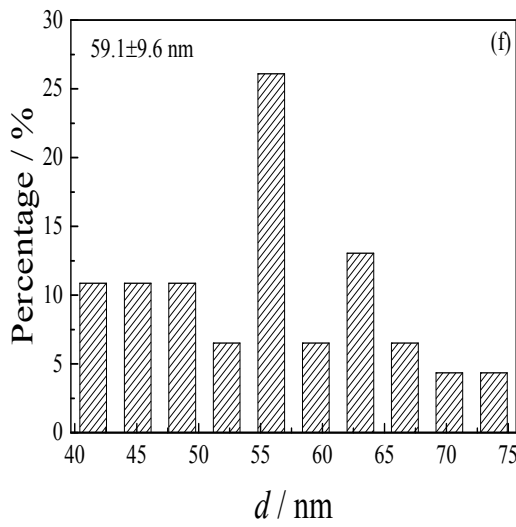
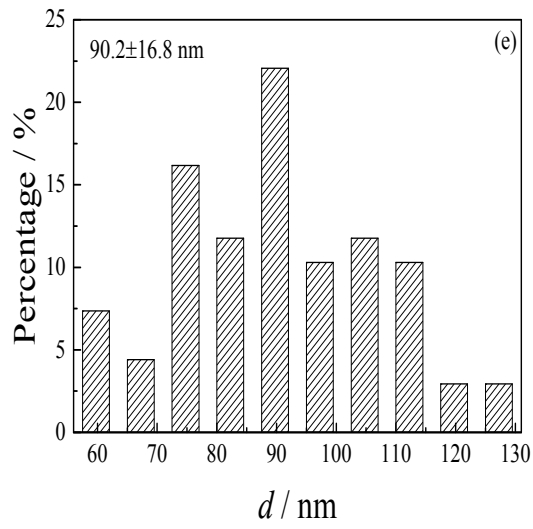
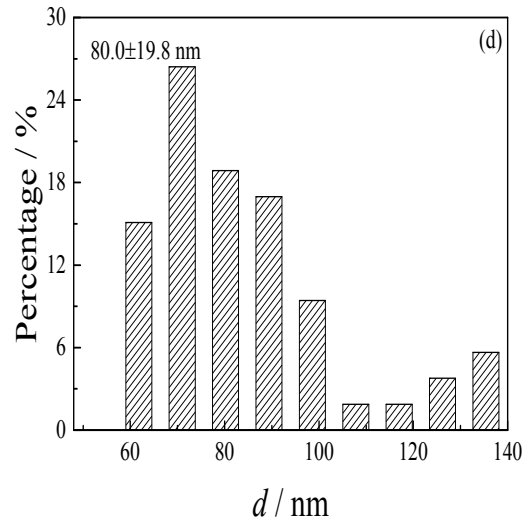
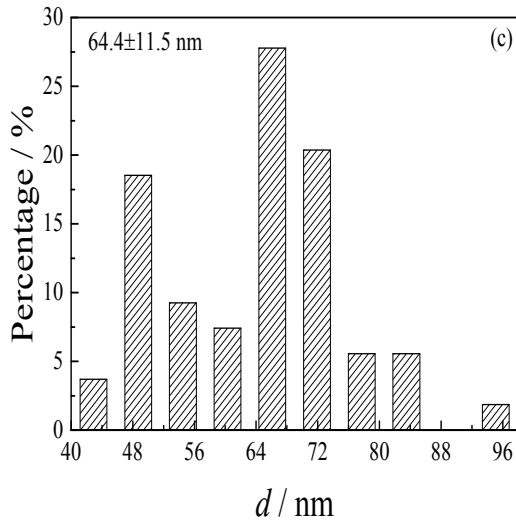
(Supplementary Information)

The bar charts of size distribution are shown in Figure S1, and it can be observed that the size distribution is homogeneous.



* Corresponding authors.

E-mail addresses: czx1w2018@163.com (Z. Cui), xyqlw@126.com (Y. Xue)



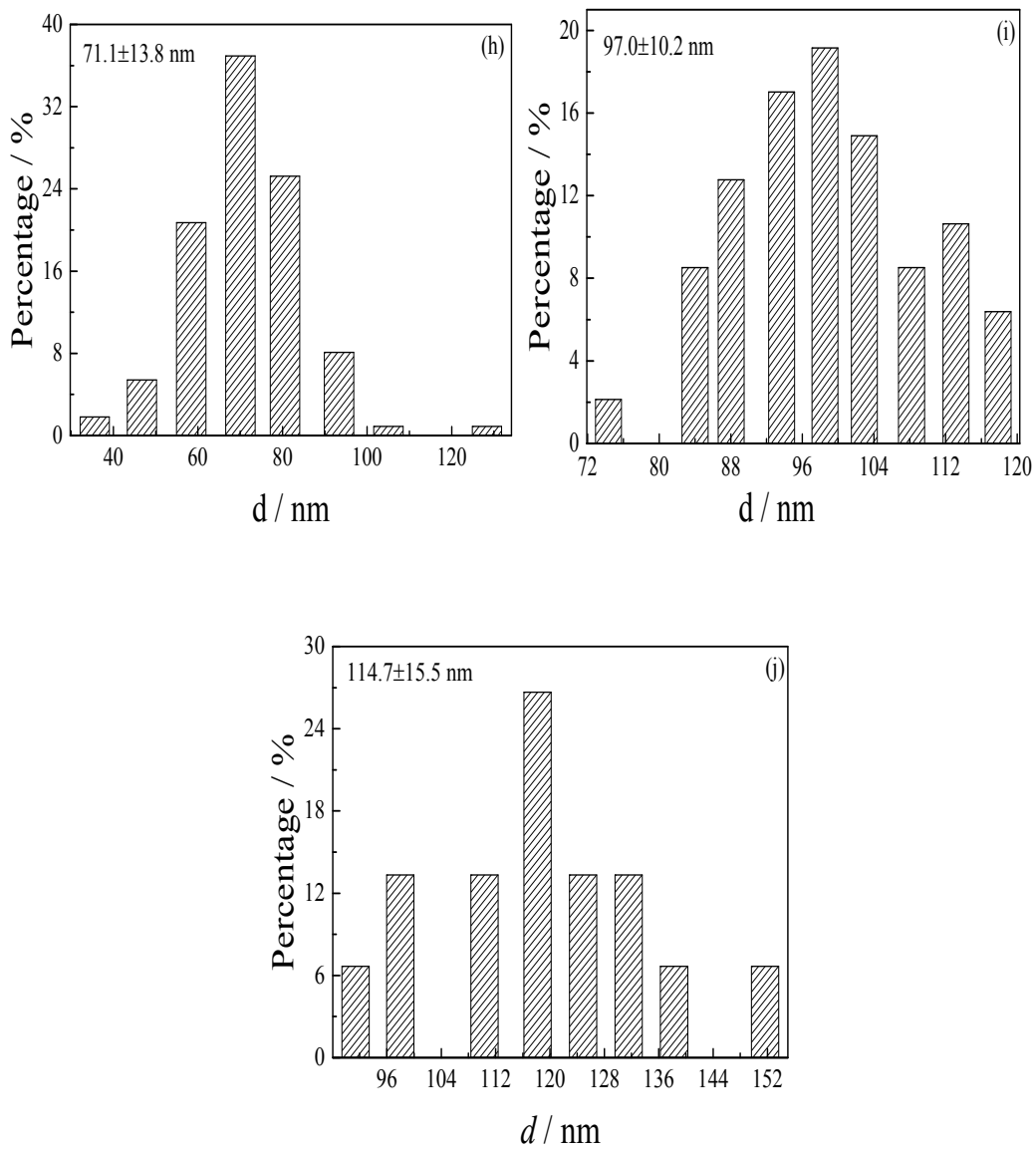


Figure S1 The bar of equivalent particle size distribution of nano-MgO of spherical (a)-(e) and cubic (f)-(j) shapes.

The plots of q_t to t are shown in Figure S2, and the results are shown in Table S1.

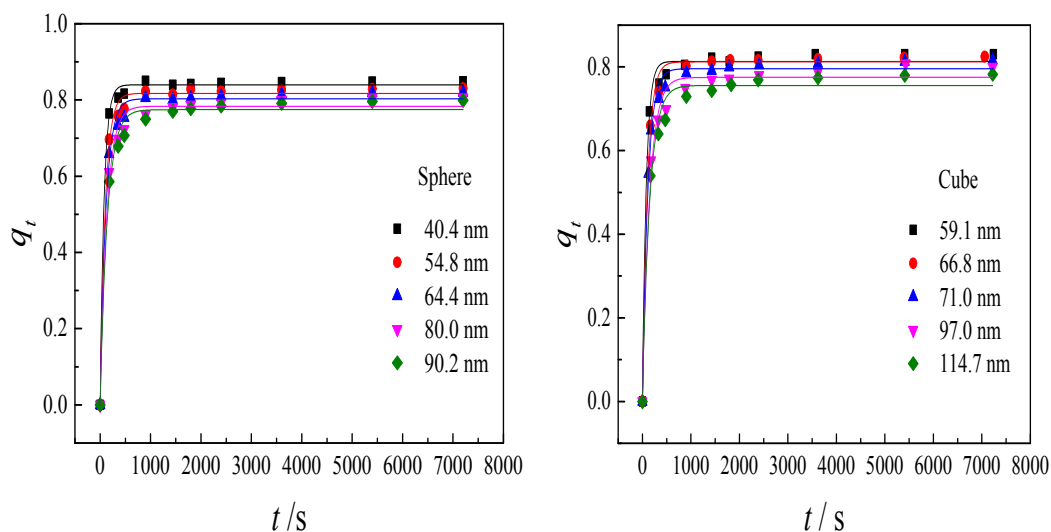


Figure S2 The fit plots of pseudo-first-order kinetic equation for the adsorption of malachite green on nano-MgO with different particle sizes at 298 K.

Table S1. The correlation coefficient parameters of pseudo-first-order kinetic equation for the adsorption of malachite green on nano-MgO at 298 K.

Sphere nano-MgO		Cube nano-MgO	
d/nm	pseudo-first-order (R^2)	d/nm	pseudo-first-order (R^2)
40.4	0.9973	59.1	0.9928
54.8	0.9940	66.8	0.9953
64.4	0.9925	71.0	0.9935
80.0	0.9894	97.0	0.9881
90.2	0.9882	114.7	0.9844

As illustrated in Table S1, we found the nonlinear fitting for the pseudo-first-order kinetic equation with the correlation coefficients $R^2 < 0.9998$.