Supplementary Materials

for

Effect of ruthenium modification of g-C_3N_4 in the visible-light-driven photocatalytic reduction of Cr(VI)

Truong Nguyen Xuan [1], Dien Nguyen Thi [1], Tue Nguyen Ngoc [1], Khanh Dang Quoc [2], Miklós Németh [3], Shoaib Mukhtar [4], and Ottó Horváth [4,*]

[1] School of Chemical Engineering, Hanoi University of Science and Technology, No.1 Dai Co Viet street, Hai Ba Trung distric, Hanoi 100000, Vietnam; truong.nguyenxuan@hust.edu.vn (T.N.X.); dien.nt212318m@sis.hust.edu.vn (D.N.T.); tue.nguyenngoc@hust.edu.vn (T.N.N.);

[2] School of Materials Science and Engineering, Hanoi University of Science and Technology, No.1 Dai Co Viet street, Hai Ba Trung distric, Hanoi 100000, Vietnam; khanh.dangquoc@hust.edu.vn

[3] Centre for Energy Research, Surface Chemistry and Catalysis Department, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary; nemeth.miklos@ek-cer.hu

[4] Research Group of Environmental and Inorganic Photochemistry, Center for Natural Sciences, Faculty of Engineering, University of Pannonia, P.O.B. 1158, Veszprém H-8210, Hungary; shoaibmukht131@gmail.com (S.M.)

* Correspondence: horvath.otto@mk.uni-pannon.hu (O.H.); Tel+36-88-624-000 / 6049 ext.

Table S1. Surface atomic concentrations (%) of g-C_3N_4 and Ru/g-C_3N_4 catalysts from XPS analysis.

	g-C_3N_4	**Ru/g-C_3N_4**
C 1s	40.7	44.4
Ca 2p	1.1	0.4
N 1s	53.9	45.8
Na 1s	0.1	0.2
O 1s	4.3	7.8
Ru 3d & 3p	-	1.4

Table S2. Comparison of Cr(VI) photocatalytic reduction efficiencies (%) with various catalysts and experimental conditions.

Catalyst	Light source	Catalyst dosage (g L^{-1})	$C_{Cr(VI)}$ (mg L^{-1})	Cr(VI) reduction efficiency (%)	Time (min)	Ref.
acid-base modified g-C_3N_4	500W Xe with filter, λ > 420 nm	0.75	20	75	120	[18]
Ag/g-C_3N_4	28W LED visible	1.0	20	64	120	[38]
TiO_2-C-SO_3H	300W Xe	1.0	10	98	120	[39]
Ag/TiO_2	solar radiaton	2.0	10	75	50	[40]
HO-g-C_3N_4	360W Xe with filter, λ > 420 nm	1.0	20	70	120	[41]
porous g-C_3N_4	300W Xe with filter, λ > 420 nm	0.1	25	85	120	[42]
CoS_2/g-C_3N_4	350W Xe with filter, λ > 420 nm	0.5	20	99	120	[20]
Cu_2O/g-C_3N_4	500W Xe with filter, λ > 400 nm	0.4	20	78	120	[25]
$Cu_{3.21}Bi_{y4.79}S_2$/g-C_3N_4	28W LED visible	0.25	10	93	60	[21]
Ru/g-C_3N_4	500W Hg with filter, λ > 400 nm	1.0	20	97	120	This work