

Supplementary information

Core/shell structure of mesoporous carbon spheres and g-C₃N₄ for Acid Red 18 decolorization

Martyna Baca, Malgorzata Aleksandrak, Ewa Mijowska, Ryszard J. Kaleńczuk and Beata Zielińska*

West Pomeranian University of Technology, Szczecin, Faculty of Chemical Technology and Engineering, Nanomaterials Physicochemistry Department, Piastow Ave. 45, 70-311 Szczecin, Poland

*Correspondence: bzielinska@zut.edu.pl

Photocatalytic decomposition of melamine

The photocatalytic activity of the obtained composite (CS/GCN) was evaluated by melamine decomposition test under simulated solar light irradiation (150 W xenon lamp with cut-off light filters of natural solar condition, Air Mass 1.5G). Typically, in a photocatalytic experiment, 5 mg of photocatalyst was dispersed in 50 ml of melamine aqueous solution (4 mg/dm³; 0,032 mmol/dm³) and placed in a quartz glass reactor. In order to avoid evaporation of reaction solution water cooling of reactor was applied. Before irradiation the suspension was stirred in the darkness for 2 h to achieve the adsorption-desorption equilibrium. Afterwards, the mixture was irradiated for 16 h. At regular intervals, about 2 ml of the reaction mixture was taken from the suspension and the absorbance was measured by UV-vis spectrophotometer (Jasco). The degree of melamine decomposition was calculated according to the equation C/C_0 where C_0 is the initial concentration of the dye solution and C is the concentration at time t . As shown in Figure S1, ~ 99 % of melamine removal after 16 h of simulated solar light irradiation was detected.

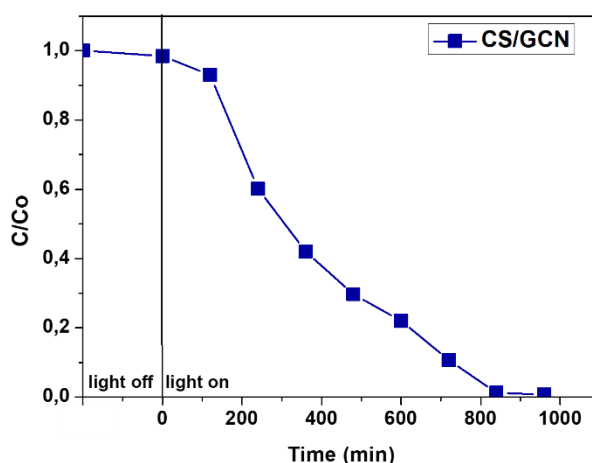


Figure S1. The photocatalytic degradation of melamine over CS/GCN under simulated solar light irradiation.