Abstract

Graphitic carbon nitride (GCN) is a powerful and distinctive two-dimensional carbon-based polymeric semiconductor having promising contribution for the elimination of organic pollutants. The combination of electron-hole pairs take place very quickly in GCN due to the existing of band gap, that's why, this material is challenging for work. Although, the addition of heteroatoms into a semiconductor breaks its symmetry and boost the substance's capacity to absorb the visible light. Phosphorus-doped graphitic carbon nitride was synthesized by simple thermal condensation technique in which diammonium hydrogen phosphate was taken as phosphorus source and urea as a g-C_3N_4 precursor. The phosphorus-doped g-C_3N_4 was characterized by using XRD, field emission SEM, and FTIR. The photocatalytic activity of phosphorus-doped g-C3N4 samples was assessed by monitoring the rate of degradation. The doping of phosphorous helped to enhance the photocatalytic activity and supported the P doped CN.