The effect of precursors on the polymerization of g−C_3N_4 in the presence of $NiTiO_3$

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In this study, graphitic carbon nitride g−C_3N_4 was used to create composites with $NiTiO_3$ by thermal polymerization method to improve their photocatalytic activity. In this process, the formation of g−C_3N_4 was generated from various precursors: dicyandiamide, melamine, urea or thiourea. Due to the nature of precursors, the g−C_3N_4/$NiTiO_3$ composites express very different performance, from the polymerization reaction process to the physical and chemical properties. These materials were studied deeply of their functional groups on the g−C_3N_4 molecules, the role of these functional groups on the interaction between g−C_3N_4 and $NiTiO_3$, on the properties of composites and on the photocatalytic activity. These materials have a high potential to apply in photocatalysis areas, such as photodegradation of organic contaminants, water splitting, etc.