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Abstract	:	In the present study, biochar-based graphitic carbon nitride (BC/g-C3N4) photocatalyst from different types of biomass waste (i.e., sugarcane bagasse (SB), palm kernel (PK) and rice husk (RH)) were synthesized via thermal polycondensation method. The efficiency of the synthesized BC/g-C3N4 for the degradation of anthracene was evaluated. Experimental results revealed that various factors during synthesis such as temperature, mass ratio of biomass to precursor and synthesis duration significantly influenced the degradation efficiency. It was found that BC/g-C3N4 derived from SB with 75% melamine, synthesized at 600 for 3 hours exhibited the highest photocatalytic degradation of anthracene with efficiency of 72%. Various parameters such as pH, phtocatalyst dosage, initial concentration of anthracene during photocatalysis experiments greatly affected the performance of BC/g-C3N4. Moreover, active species trapping experiments confirmed that the key reactive species during photocatalytic reaction were h+ and *O2 − Reusability study proved that the performance of BC/g-C3N4 were maintained above 60% even after 5 cycles of experiments. This study promotes the use of biomass as a green photocatalyst for sustainable solution for water and wastewater treatment.