

of interest especially in complex matrices, hybrid material of methyltrimethoxysilane-(3-mercaptopropyl)trimethoxysilane (MTMOS-MPTMOS) as the adsorbent of hollow fiber-solid phase microextraction (HF-SPME) was synthesized for that purpose. In the present work, the hybrid sol-gel material was held in the pores of HF by in situ gelation and was used to extract the target aldehydes using the direct immersion sampling mode. Several parameters affecting the extraction performance of the in-house sol-gel material were optimized. The extraction efficiencies of detection of target aldehydes were analyzed using gas chromatography-flame ionization detector. The best extraction performance of MTMOS: MPTMOS for hexanal and heptanal was obtained with a molar ratio of 1:4 MTMOS: MPTMOS.

Keywords: sol gel; hybrid; adsorbent; hollow fiber-solid phase microextraction; aldehydes; lung cancer; gas chromatography-flame ionization detector

C11. Cr DOPED TiO₂ SUPPORTED ON TUD-1 PHOTOCATALYST FOR CONGO RED PHOTODEGRADATION

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A series of new visible light driven photocatalysts of 1 mol% Cr doped TiO₂ supported on various amount of TUD-1 have been successfully synthesized via sol gel method. XRD analysis revealed that all the Cr-TiO₂/*x*TUD-1 (*x* = 10, 20, 30, 40 and 50 mol%) photocatalysts were in amorphous form. Both TiO₂ and Cr were incorporated in the highly porous siliceous matrix. FTIR analysis indicated the existence of Si-O-Ti bonding in all the materials. UV-Vis DR analysis suggested that alteration of Ti species occurred from tetrahedrally to octahedrally coordinated Ti species when higher TUD-1 amount was used as photocatalyst support. However, the amount of TUD-1 did not affect the wavelength response and the band gap energy of the resulted materials. All the materials were having band gap energy of ~2.9 eV. The photocatalytic performance of the synthesized materials was evaluated through the photodegradation of Congo Red under visible light irradiation at 298 K for 5 h. Results showed that all the Cr-TiO₂/TUD-1 materials had higher photocatalytic activity compared to Cr-TiO₂. Amongst, Cr-TiO₂/30TUD-1 appeared as the most superior photocatalyst that gave the highest percentage of dye degradation.

Keywords: TUD-1; TiO₂; photocatalyst; Congo Red

C12. EFFECT OF TIP-TO-COLLECTOR DISTANCE ON ELECTROSPINNING OF POLY(LACTIC ACID)/CHITOSAN NANOFIBERS

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In this poster, we presented the study of effect of tip-to-collector distance on electrospinning of poly(lactic acid)/chitosan nanofibers. The polymer solution for electrospinning was prepared by dissolving poly(lactic acid) and chitosan (4:1, w/w) in trifluoroacetic acid (TFA). The polymer solution was then subjected to a voltage of 12kV. A piece of aluminium foil, kept at various distance (2 ~ 8 cm) from the needle tip was used to collect the nanofibers. At tip-to-collector distance of 8cm, bead-free, smooth surfaced nanofibers composed of poly(lactic acid) and chitosan were successfully prepared using electrospinning, as confirmed by Scanning Electron Microscopy (SEM). The elemental composition obtained from Energy Dispersive X-Ray (EDX) analysis confirmed the