# A novel adsorbent magnetic graphene oxide modified with chitosan for the simultaneous reduction of mycotoxins


## ABSTRACT

A novel magnetic graphene oxide modified with chitosan (MGO-CTS) was synthesised as an adsorbent aimed to examine the simultaneous removal of mycotoxins. The composite was characterised by various procedures, namely Fourier-transform infrared spectroscopy (FTIR), X-ray diffraction (XRD) and a scanning electron microscope (SEM). The adsorption evaluation was considered via pH effects, initial mycotoxin concentration, adsorption time and temperature. Adsorption isotherm data and kinetics experiments were acquired at the optimum pH 5 fit Freundlich isotherm as well as pseudo-second-order kinetic models. The thermodynamic results indicated that the adsorption of the mycotoxins was spontaneous, endothermic and favourable.



**Keyword:** Adsorbent; Reduction of mycotoxins; Isotherms; Kinetics; Thermodynamics