Fig. S1 shows the FTIR spectra of the surfactant (CTAB) and the Fe₃O₄@mZrO₂ core/shell material. Absence of any peak corresponds to the surfactant in the FTIR spectrum of Fe₃O₄@mZrO₂ exhibits that refluxing with acetone removes all the surfactant molecules from the as-synthesized material to give the desired Fe₃O₄@mZrO₂ core/shell compound.
Fig. S2 FTIR spectra of the Fe₃O₄@mZrO₂ before and after phosphate adsorption.

Fig. S3 EDX pattern of the Fe₃O₄@mZrO₂.