



**Wolfson Department of Chemical Engineering Special Seminar
Lecture Hall 6, Wolfson Department of Chemical Engineering,
Monday July 2nd at 2 pm**

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**REMOVAL OF PHOSPHATE FROM WASTEWATER BY ADSORPTION ON FLUIDIZED
BED CALCITE PARTICLES**

Desalinated domestic wastewater is an essential water resource especially in arid regions. Widespread application of reverse osmosis (RO) purification of secondary effluent is hindered by the calcium phosphate scaling problem. According to the US Environmental Protection Agency, phosphorus pollution from municipal wastewater discharges, runoff from agricultural operations, and other sources is on track to becoming one of the most expensive and arduous environmental challenges of the future. Calcite particles are known to exhibit phosphate adsorption from aqueous solutions. The objective of this research was to explore the possibility of wastewater purification by the simple process of adsorption of phosphate on calcite particles. This was carried out by conducting batch and continuous Fluidized Bed Reactor (FBR) experiments aiming to study the effects of solution chemistry on phosphate removal; to investigate the process kinetics and mechanism; and to determine the effects of FBR design parameters on the efficiency of phosphate removal by calcite.

Refreshments will be served at 1:45pm