



**Wolfson Department of Chemical Engineering Seminar  
Lecture Hall 6, Wolfson Department of Chemical Engineering,  
Wednesday November 22<sup>nd</sup> at 1:30pm**

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**Rational Design of Carbon Electrocatalysts: Synthesis, Structure, Activity**

Carbon materials – highly porous, partially graphitic, and hetero-doped – are rising electrodes in electrochemical devices for energy storage. This is a curious twist of history: for many millennia carbon was mostly a low-value energy source, only good for burning up. These days, we find carbon electrodes in power sources as diverse as batteries, fuel cells and supercapacitors. The microstructure of such carbons – affecting much of their electrochemical function – is hard to design and control. We have recently reported a family of N-doped, hierarchically porous carbons, whose structure and composition can be tuned rationally, opening the way to in-depth studies of structure–activity links. These carbons are derived from metal-organic frameworks (MOFs), whose composition can be controlled and correlated to the final carbon structure, and ultimately, electrocatalytic properties. This talk will discuss design principles of carbon-based electrocatalysis, focusing on elegance of synthesis, separation of structural variables, and understanding electrocatalytic function.

Refreshments will be served at 1:15pm