A recent paper, to be published in Chemical Communications, written by Andrew Mills and Nathan Wells, has been highlighted in a Chemistry World article. The article describes a new method of detecting commercial semiconductor photocatalysts to assess their ‘self-cleaning’ ability, and represents quite a step forward for activity testing.
PDRA Position now open

February, 2015

Professor Andrew Mills is now hiring a PDRA for a 1 year contract working with semiconductor photocatalytic materials. Applicants can apply via the following link:

PDRA Position
PhD Studentship Available - Super-ambient Gas Phase Photocatalysis

February, 2015

Supervisor: Prof. A Mills; Second supervisor: Prof. Hardacre

Start date: 1st Oct 2015; duration: 3 years; qualifying candidates: UK citizens with a 1st class degree in Chemistry or Chemical Engineering by 1st October 2015.

Semiconductor photocatalysis is emerging as a significant new photochemical process for creating innovative commercial products, such as: self-cleaning glass, concrete and tiles. However, to date attention has been restricted to ambient temperature applications of the technology and in this project we explore its application at elevated temperatures. In particular, we will use semiconductor photocatalysis to mediate gas phase reactions of commercial significance, at lower temperatures than the conventional thermal catalytic reactions. These reaction will include: alcohol reforming, steam reforming, the water-gas shift reaction and environmental air clean-up reactions, such as NOx and ozone removal. The PhD candidate will receive training not only in thermal catalysis but also photocatalysis, using a variety of techniques including: DRIFTS-MS, BET, SEM, TEM and laser-driven, time-resolved transient absorption spectroscopy. This research area is very new and so open to many new discoveries and challenges; thus, the project is only really suitable for a highly motivated candidate seeking a project with adventure and panache.

Interested in applying? Send CV to: andrew.mills@qub.ac.uk
The paper entitled ‘Smart, reusable labels for assessing self-cleaning films’, has been selected to feature as the front cover article for Chemical Communications Issue 20, 2015. The paper describes a simple test for detecting the presence, and assessing the activity, of semiconductor photocatalyst thin films using an adhesive indicator.
Mills group members Dr O’Rourke and Dr Hazafy flew out to Japan to visit an exhibition on self-cleaning materials, and discuss the group's efforts to introduce a new ISO standard for measuring the activity of self-cleaning surfaces.
A tutorial review article, published in Chemical Society Reviews by Professor Andrew Mills and Mr Nathan Wells, outlines the groups work on reductive photocatalysis and its various practical applications.
Harwell Campus Open Day

July, 2015

The Mills group sent representatives to the Harwell campus in Oxfordshire to give talks and presentations on their work on semiconductor photocatalysis and SODIS. The campus was open to the public, and over the course of the day over 15,000 people passed through to see the cutting edge in science and engineering.
In 2015, the Mills group had the great privilege of having Pperng Surachai Khankaew (pictured left) as a visiting young researcher to work on a joint project between Professor Andrew Mills (pictured centre) and Professor Panuwat Suppakul (pictured right).

He remained with the group for 7 months and had a tremendous impact on everyone working with him.
Visiting Researcher from Spain

November, 2015

Starting November, visiting PhD student Eva Jimenez will be joining the group for a 3 month placement to evaluate semiconductor photocatalyst containing concrete samples using Professor Andrew Mills’ rapid activity indicator inks.