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Master student project in organic functional materials

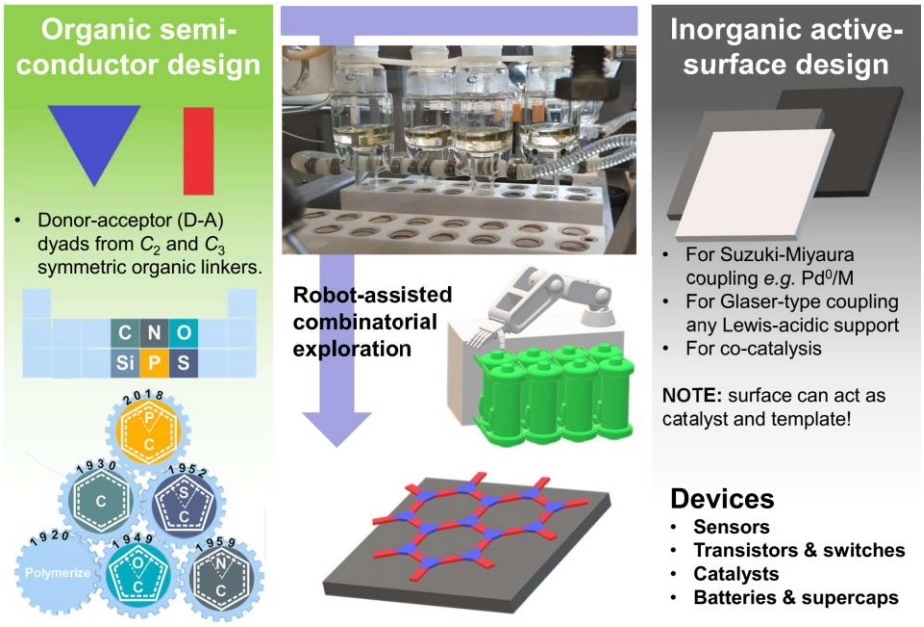
A **6-months Master project position** entitled **"Controlled layer-by-layer deposition of 2D (S, N, P)-nanomaterials"** is available at the **Functional Nanomaterials** group, Department of Chemistry, King's College London, starting **from October 2020**.

Requirements:

- Enthusiasm for the topics of energy storage, and conversion.
- Ability to communicate within an international team (UK, Germany).

We offer:

- Participation in cutting-edge materials chemistry research.
- Opportunity to gain expertise in novel analytical and synthetic techniques (high-throughput synthesis, X-ray diffraction, electron microscopy).



Chances are you are reading this text on the screen of a desktop computer, tablet, or even a smartphone, and in each of your devices, silicon has been processed into thin, semiconducting layers. Moore's Law—i.e., the observation that computing power is doubling every year—has delivered on its promise so far, but last year's announcement made by microprocessor giant Intel at the 2015 international solid-state circuits conference (ISSCC) challenges this golden rule that has governed silicon industry for over four decades. Intel's new 10 nm manufacturing process for microchips expected in 2017 will be the end of the road for silicon, and devices based on 7 nm and beyond, Intel says, will require entirely new materials.

This is where the **Functional Nanomaterials Group** comes in: we explore covalent organic chemistry at interfaces with the aim to achieve organic transistor devices and sensors (*Nat. Commun.* **2019**. DOI: 10.1038/s41467-019-11264-z). Our organic semiconductors have also found application in heterogeneous photocatalysis (*Angew. Chem., Int. Ed.* **2018**. DOI: 10.1002/anie.201809702) making use of in-built donor-acceptor dyads for effective separation of photo-excited electron-hole pairs; this is a fundamentally novel concept that we would like to explore further together with you, the successful applicant (*Nat. Rev. Mater.* Article number: 17030 (**2017**). DOI: 10.1038/natrevmats.2017.30).

For questions please do not hesitate to contact **Dr. Michael J. Bojdys**, tel: +491774818190, e-mail: m.j.bojdys.02@cantab.net