



## Meeting Report

### Reaction Platforms for the 21<sup>st</sup> century lab: Synthesis-on-Demand at minimum waste

#### An EPSRC Dial-a-Molecule Grand Challenge theme meeting 11-12 August 2011; GSK, Stevenage Research Centre, UK

One of the most successful of this summer's **Dial-a-Molecule** Grand Challenge meetings, a highly motivated 2-day event, took place on 11-12 August at **GSK, Stevenage Research Centre**. The meeting brought together numerous scientists from across industry and academia. The meeting included presentations from the champions of the theme and small group discussions on the emerging themes in synthesis. It aimed at identifying which projects are required to increase our ability to generate new molecules faster and more efficient.



The meeting was opened by Prof Richard Whitby (University of Southampton) who welcomed the participants and presented the aims of the **Dial-a-Molecule** Grand Challenge and the objectives of this meeting.

The introductory talk was followed up by Dr. Harris Makatsoris's (Brunel University London) presentation introducing the audience to *the theme Reactor platforms for the 21<sup>st</sup> century lab*. Dr. Simon Hayes (GSK) – presented *An Industry perspective on the Next Generation Reactor Platforms* while Dr. Stephen Hillier (Chemistry Innovation KTN) focused on *Potential Funding Mechanisms*. The second part of the morning program included participants presentations framing the challenge using for the first time at Dial-a-Molecule meetings the flash presentations model, session chaired by Prof. Asterios Gavrilidis (University College London).

The afternoon scientific activities were dedicated to two Breakout sessions both aimed to defining future research agenda, discussions intended to produce ideas and directions for the build up of the roadmap. Each of the two Breakout sessions was divided into three groups of discussions, as follows:

Group 1 – Reactor platforms, including reactor networks and replication and scalability; Group 2 – Intelligent feedback control, including on-line reaction analytics; Group 3 – Purification.

The first day of the meeting was ended with general discussions underlining the main ideas arising from the group debates and establishing general rules for the future actions.

The second day of the workshop was kicked-off by a plenary presentation from Prof. Richard Whitby (University of Southampton) with a review on the discussions from the first day and establishing the frame for the activities of the second day. Prof. Whitby's talk was followed by three very interesting presentations: Prof. Alexei Lapkin (Warwick University) – *Flow synthesis of intermediates and materials: examples, pitfalls and system-level approach*; Dr. Andrew Coleman (HEL Group) – *The need for accurate data capture* and Dr. Bashir Hanji (Cambridge Reactor Design) – *Aspiring to improving methods of working*. The morning session of presentation was ended by the talk of Dr. Vivek Dua (University College

London about *Robust Design under Uncertainty*. The next hour was dedicated to a Breakout session focused on ideas generation based on group discussions in Day 1.

In the afternoon a new breakout session was devoted to establishing direction for developing partnerships and setting up the future steps for the development of the project and networking. Interesting and beneficial discussions summarizing the presentations and debates of the two days ended the meeting.

No doubt the meeting may be considered a success. The interesting presentations pointing out the main objectives of the **Dial-a-Molecule** project and the challenges in today's synthesis opened the doors for discussions meant to clarify main aspects for '*Reactor platforms for the 21<sup>st</sup> century lab*' theme. From the fruitful discussions among participants with a lot of valuable ideas arose as a foundation for the future development of the **Dial-a-Molecule** Grand Challenge.

The organising committee would like to thank all the delegates who attended as well the GSK for hosting the meeting and the valuable support provided.

The outputs from the meeting, summarised in a plenary session, were not only tightly developed challenges for inclusion in the **Dial-a-Molecule** roadmap, but also new research groupings and networks stimulated through the discussions. Overall this was a highly interactive, stimulating and enjoyable two days meeting, which was, in fact, a characteristic for all **Dial-a-Molecule** challenge themes events in the 2011 summer.

