Young Career Focus: Professor Jianhui Huang (Tianjin University, P. R. of China)

Background and Purpose. SYNFORM regularly meets young up-and-coming researchers who are performing exceptionally well in the arena of organic chemistry and related fields of research, in order to introduce them to the readership. This Young Career Focus presents Professor Jianhui Huang (Tianjin University, P. R. of China).

Biographical Sketch

Prof. J. Huang

Jianhui Huang is from Tianjin (P. R. of China). He received his B.A. degree in analytical chemistry from Hu'nan University (P. R. of China) in 2000. He decided to study abroad in 2003 and received his Ph.D. in chemistry from the University of York (UK) under the guidance of Professor Peter A. O'Brien. In 2007, he moved to the University of Sheffield (UK) working with Professor Joseph P. A. Harrity on the cycloaddition reactions of alkynyl boronates. He started his independent research in 2010 when he returned to China and joined the faculty as an Associate Professor of Medicinal Chemistry in the School of Pharmaceutical Science and Technology at Tianjin University (P. R. of China).

His research interest covers the development of new synthetic tools and design/synthesis of useful metal-containing scaffolds for medical purposes. Other interests include entertaining his daughter Agnes and pipe making.

INTERVIEW

SYNFORM *What is the focus of your current research activity?*

Prof. J. Huang The research focus of our group is to develop new disruptive ways of molecular modification/construction. In particular, we are currently focusing on the development of strategies for the preparation of reliable molecular scaffolds using metal as the core element.

SYNFORM *When did you get interested in synthesis?*

Prof. J. Huang When I first worked at Tianjin Institute of Pharmaceutical Research (P. R. of China), we were working on the development of new processes for generic drugs. I found the real chemical world is a little different from what we know from the textbook and practical course. It is challenging and rewarding! I started working in the unknown world tasting the flavor of discovery.

SYNFORM *What do you think about the modern role and prospects of organic synthesis?*

Prof. J. Huang I think we will have to expand the chemical space with the increase of molecular complexity!!! We have been a little conservative on the conventional molecules, avoiding technical problems. Challenges need be taken on both molecular science (design/synthesis) and molecular engineering (separation/characterization).

SYNFORM *Your research group is active in the area of synthetic methodology and bioorganic/medicinal chemistry. Could you tell us more about your research and its aims?*

Prof. J. Huang We have developed a number of new strategies for the construction of heterocycles through a number

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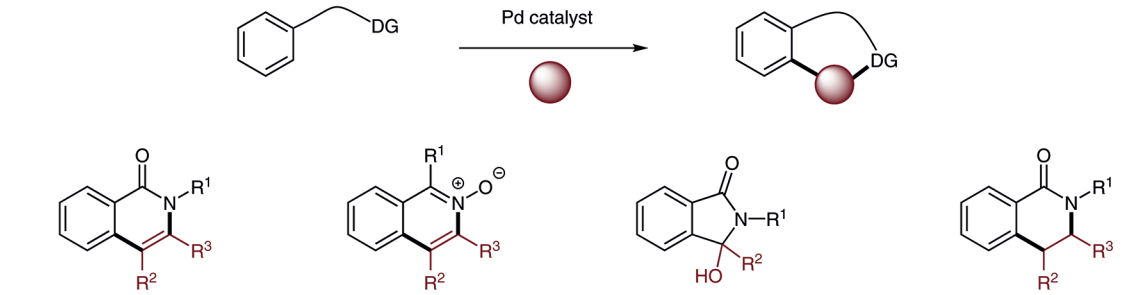

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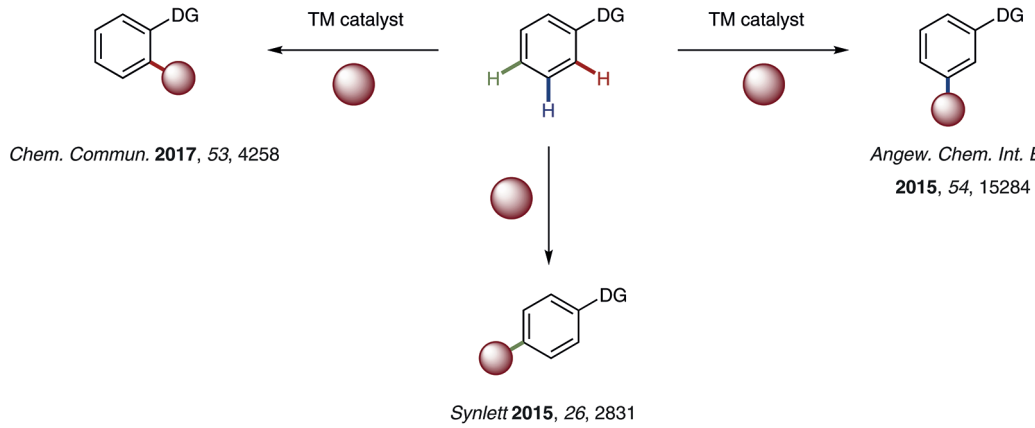
Scheme 1 Pd-catalyzed synthesis of various heterocycles via C–H activation



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Scheme 2 Selective arene functionalization

of key transition-metal-catalyzed C–H activation annulation reactions. These methods were successfully applied to the synthesis of isoquinolones,[1] isoindolones[2] and tetrahydroisoquinolones[3] (Scheme 1).

Our aims are simply to make compounds by late-stage functional group introductions to design and create molecules covering new chemical spaces, in particular, the preparation of stable organometallic/inorganic drug-like molecules (a major part of our current research focus).

SYNFORM *What is your most important scientific achievement to date and why?*

Prof. J. Huang We have focused on regioselective arene functionalizations. More specifically, we were able to promote a meta-selective bromination of arenes using ruthenium catalysis (Scheme 2).[4] These approaches have provided new tools for molecular design in much more efficient ways.

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