

European Chemistry Congress

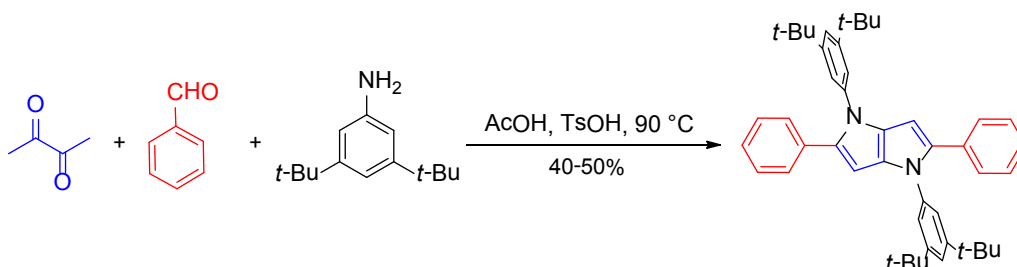
June 16-18, 2016 Rome, Italy

**Daniel T Gryko**

Polish Academy of Sciences, Poland

Pyrrolo[3,2-*b*]pyrroles – new electron-rich functional π -electron system

Two-photon absorption (2PA) is a non-linear optical phenomenon with broad scope of applications. It has already been applied, or is under intensive investigation, in fields such as: optical limiting, multiphoton pumped frequency-upconversion lasing, polymerization-microfabrication, 3D-data storage, two-photon excited fluorescence etc. Recently we have discovered and optimized the first practical synthesis of non-fused pyrrole[3,2-*b*]pyrroles *via* domino reaction of aldehydes, primary amines, and butane-2,3-dione. Six bonds are formed in heretofore unknown tandem process, which gives rise to substituted pyrrole[3,2-*b*]pyrroles – the ‘missing link’ on the map of aromatic heterocycles. Unparalleled simplicity and versatility of this one-pot reaction, non-chromatographic purification and superb optical properties (including strong violet, blue or green fluorescence both in solution as well as in the solid state), brought these molecules from virtual non-existence to the intensively investigated area functional π -systems.



Biography

Daniel T Gryko obtained his PhD from the Institute of Organic Chemistry of the Polish Academy of Sciences in 1997, under the supervision of Prof. J. Jurczak. After a Postdoctoral stay with Prof. J. Lindsey at North Carolina State University (1998–2000), he started his independent career in Poland. He became Full Professor in 2008. The same year he received the Society of Porphyrins and Phthalocyanines Young Investigator Award. His current research interests are focused on the synthesis of various functional dyes as well as on two-photon absorption, artificial photosynthesis, excited-state intramolecular proton transfer and fluorescence probes.

dgryko@ch.pw.edu.pl