

Dr Etienne Baranoff

Birmingham Fellow

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About

Etienne Baranoff is a Birmingham Fellow and his research deals with the design, synthesis and study of organic materials (in a broad sense, including organometallic complexes) for light and energy related applications such as OLEDs and photovoltaic cells. The primary goal is to understand the impact of bulk morphology on materials properties and to control the aggregation of molecules in condensed phases.

Qualifications

- PhD in Chemistry (with Professor Jean-Pierre Sauvage), Université de Strasbourg, 2003

Biography

Etienne Baranoff received his PhD degree in chemistry from the Université de Strasbourg (former Université Louis Pasteur) in 2003 (PhD thesis title: *Photoinduced electron transfer in triads based on iridium(III) bis-terpyridine complexes*).

From 2004 to 2007 he went to the University of Tokyo as a post-doctoral fellow of the Japan Society for the Promotion of Science (JSPS). He studied about supramolecular liquid crystals and soft matter in general with Professor Takashi Kato.

From 2007 to 2011 he was a research associate at École Polytechnique Fédérale de Lausanne (EPFL) in the group of Professor Grätzel, where he developed new transition metal complexes for various light-related applications such as OLEDs, DSCs, and sensors.

In 2012 he became a Birmingham Fellow at the University of Birmingham.

Research

RESEARCH THEMES

- Organic and organometallic synthesis
- Photoluminescence
- Electron transfer
- Electroluminescence, OLEDs and LECs
- Organic photovoltaic
- Sensing
- Self-assembly
- Liquid crystals
- Bulk morphology of organic materials

Publications

Selected Publications

- Yum, J.-H.; Baranoff, E.; Kessler, F.; Moehl, T.; Ahmad, S.; Bessho, T.; Marchioro, A.; Ghadiri, E.; Moser, J.-E.; Yi, C.; Nazeeruddin, M. K.; Grätzel, M. (2012) A cobalt complex redox shuttle for dye-sensitized solar cells with high open-circuit potentials *Nat. Commun.* 3, 631
- Baranoff, E.; Curchod, B. F. E.; Monti, F.; Steimer, F.; Accorsi, G.; Tavernelli, I.; Rothlisberger, U.; Scopelliti, R.; Grätzel, M.; Nazeeruddin, M. K. (2012) Influence of halogen atoms on a homologous series of bis-cyclometalated iridium(III) complexes *Inorg. Chem.*, 51, 799-811
- Baranoff, E.; Curchod, B. F. E.; Frey, J.; Scopelliti, R.; Kessler, F.; Tavernelli, I.; Rothlisberger, U.; Grätzel, M.; Nazeeruddin, M. K. (2012) Acid-Induced degradation of phosphorescent dopants for OLEDs and its application to the synthesis of tris-heteroleptic iridium(III) bis-cyclometalated complexes *Inorg. Chem.*, 51, 215-224
- Kessler, F.; Costa, R. D.; Di Censo, D.; Scopelliti, R.; Orti, E.; Bolink, H. J.; Meier, S.; Sarfert, W.; Grätzel, M.; Nazeeruddin, M. K.; Baranoff, E. (2012) Near-UV to red-emitting charged bis-cyclometalated iridium(III) complexes for light-emitting electrochemical cells *Dalton Trans.*, 41, 180-191
- Burschka, J.; Dualeh, A.; Kessler, F.; Baranoff, E.; Cevey-Ha, N.-L.; Yi, C.; Nazeeruddin, M. K.; Grätzel, (2011) M. Tris(2-(1H-pyrazol-1-yl)pyridine)cobalt(III) as p-Type Dopant for Organic Semiconductors and Its Application in Highly Efficient Solid-State Dye-Sensitized Solar Cells *J. Am. Chem. Soc.*, 133, 18042-18045
- Baranoff, E.; Jung, I.; Scopelliti, R.; Solari, E.; Grätzel, M.; Nazeeruddin, M. K. (2011) Room-temperature combinatorial screening of cyclometalated iridium(III) complexes for a step towards molecular control of color purity *Dalton Trans.*, 40, 6860-6867
- Baranoff, E.; Orselli, E.; Allouche, L.; Di Censo, D.; Scopelliti, R.; Grätzel, M.; Nazeeruddin, M. K. (2011) A bright tetranuclear iridium(III) complex *Chem. Commun.*,

