DEPARTMENT OF CHEMISTRY

START

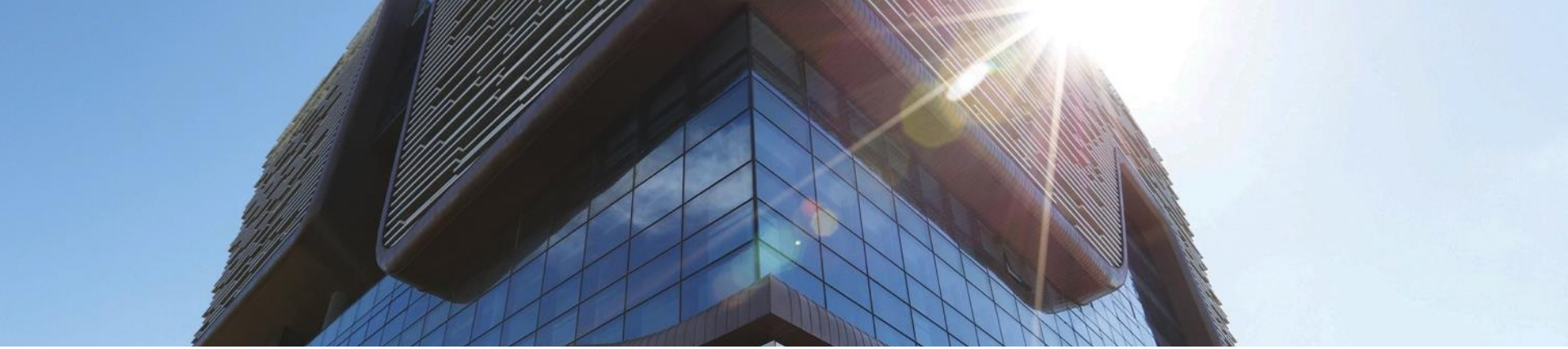
Xi'an Jiaotong-Liverpool University
西交利物浦大学

Research Theme

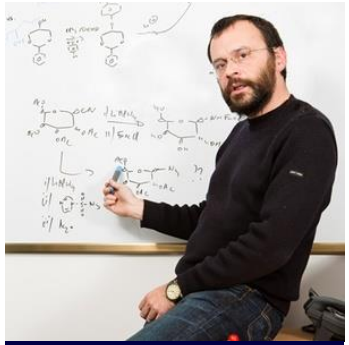
Sustainable Energy (energy storage, green chemistry)
Theme Lead: Ruiyao Wang, 7 staff (Ruiyao, Lifeng, Stepan, Yi Lin, Li Yang, Graham, Hongbo)

Functional Materials (nanoscale science, electrochemistry, battery materials, polymers)
Theme Lead: Graham, 8 staff (Chris, Li Yang, Graham, Kim, Ruiyao, Lifeng, Stepan, Hongbo)

Medicinal and Organic Chemistry (Enzyme inhibitors, disease detection,
drug delivery)
Theme Lead: Chris, 6 staff (Chris, Margie, Yi Lin, Eric, Yi Li, Kim)

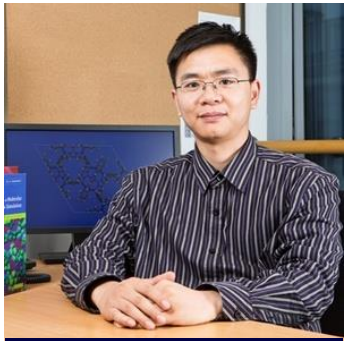


Staff Directory



Dr Eric Amigues

Dr Graham Dawson

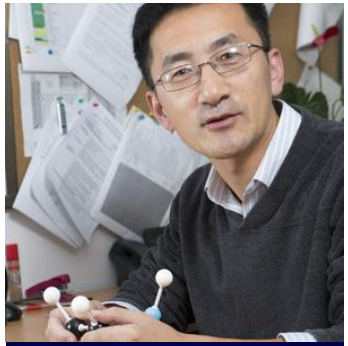


Dr Lifeng Ding

Professor Chris Gwenin

Dr Stepan Kashtanov

Professor Kim Lau

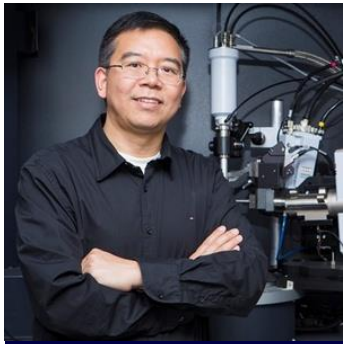


Dr Yi Li

Dr Yi Lin

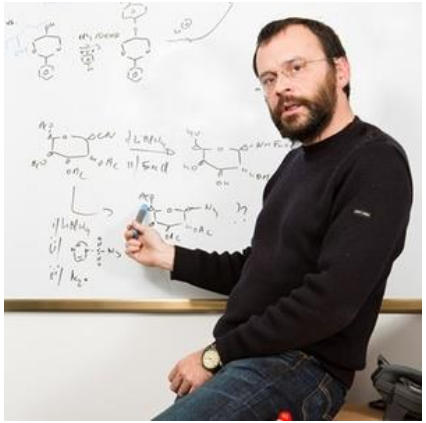
Dr Magdalini Matziari

Dr Hongbo Wang



Dr Ruiyao Wang

Dr Li Yang



Dr. Eric Amigues

Eric.Amigues@xjtlu.edu.cn

Research interests:

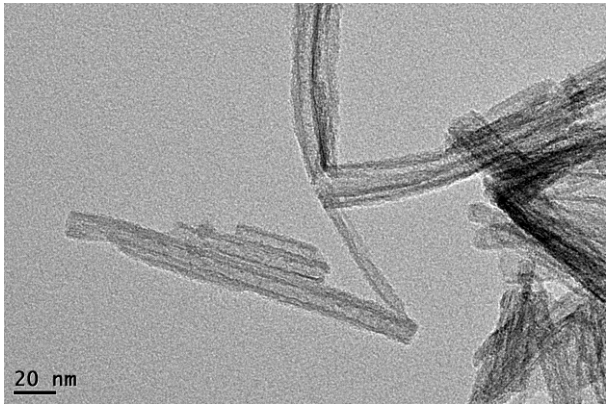
- **Carbohydrate chemistry**
- **Ionic liquids**
- **Bioimaging (PET)**

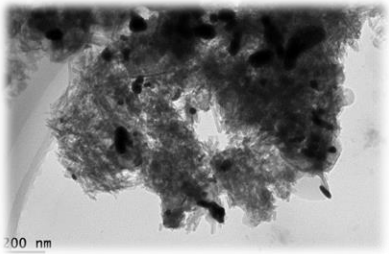
Dr Graham Dawson

Graham.Dawson@xjtlu.edu.cn

Key interests: Surface modified nanomaterials for application in photocatalysis and SERS

Water splitting

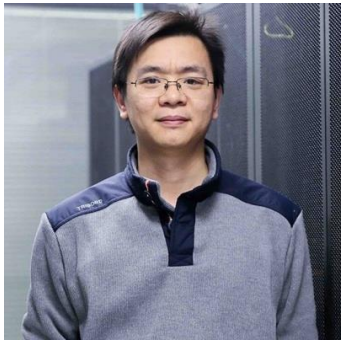




Gold Nanoparticles

Dawson et al., *ChemCatChem*, 2012, **4**, 1133

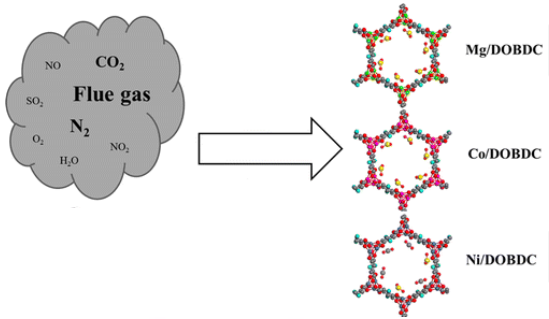
Ruochen Liu, Xuejian Fu, Congyi Wang and Graham Dawson*, Chemistry- A European Journal, 2016, **22**, 6071-6074



Dr Lifeng Ding

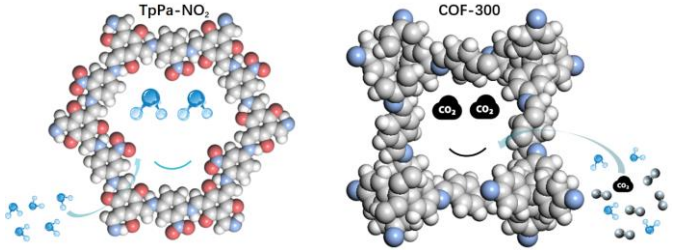
Lifeng.Ding@xjtlu.edu.cn

Key interests: Molecular simulation and design of novel nanoporous materials and polymers for practical applications.



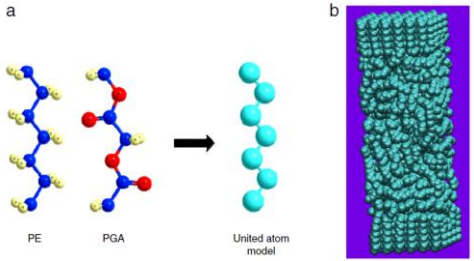
Separation and Environment:

- CO_2 capture
- Harmful gas separation
- Isotope separation
- Hydrocarbon separation
- Water harvesting



Energy Gas Storage:

- Hydrogen storage
- Methane storage



Polymers:

- Biodegradable polymer
- Hyperbranched polymer

Professor Chris Gwenin

Christopher.Gwenin@xjtlu.edu.cn

Applied Research in Chemistry and Health

Advancing interdisciplinary science through creative collaborations for innovative solutions

We have various research interests all of which involve interdisciplinary teamwork:

- Enzyme prodrug cancer therapy
- The design of sensors for tuberculosis
- The study of Self-Assembled Monolayers
- The detection of botulinum neurotoxins
- The detection of MRSA
- The detection of Cortisol
- The detection of Sepsis

The team

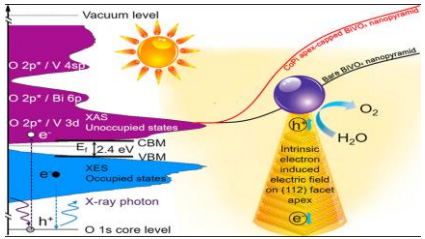
Dr. Stepan Kashtanov

Stepan.Kashtanov@xjtlu.edu.cn

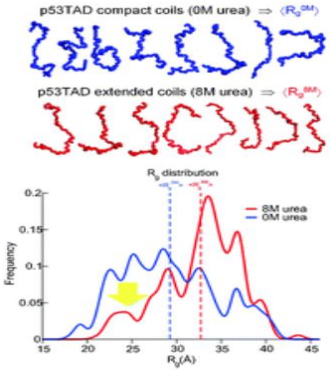
Key interests:

- Theoretical Spectroscopy (NEXAFS, XES, RIXS),
- Computational description of the interaction of molecules with surfaces, nanoparticles, aggregates, and solvents,
- Computational studies of the electronic properties of novel molecular and complex systems.

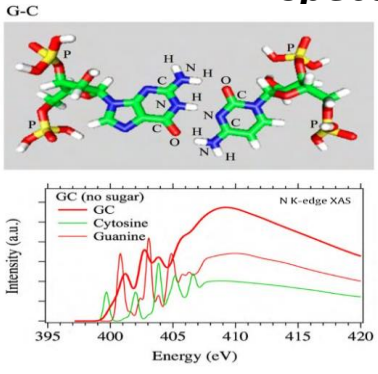
Light-driven chemical transformations



Proteins function and structure



Electronics structure and computational spectroscopies



Professor Kim Lau

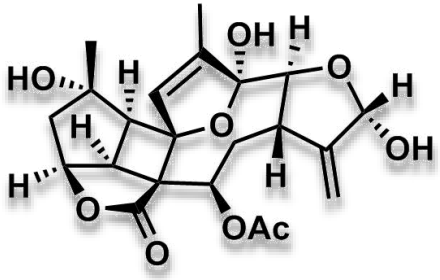
Kim.Lau@xjtlu.edu.cn

Research interests

- Sensing and sensor platform development
  - Low-cost sensing platform and disposable sensors
- Wearable sensing
  - Sweat analysis, human-computer interaction; smart wearables
- Personal health monitoring
  - Long term real-time analysis of small bioactive molecules using bodily fluid e.g. saliva, blood plasma, etc. as media e.g. for diabetes monitoring
  - Low-cost rapid disease screening e.g. stomach ulcers
- Environmental monitoring and water purification
  - Conducting polymers based heavy metal controlled capture and release
  - Gas sensor for VOCs

Dr. Yi Li

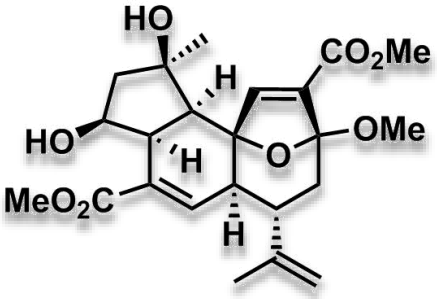
Yi.Li@xjtlu.edu.cn



Bielschowskysin

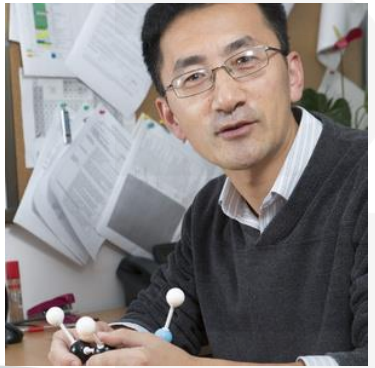
Biomimetic Synthesis of Polycyclic Diterpenes from Coral

Key interests:
Organic synthesis
Natural Products
Medicinal Chemistry

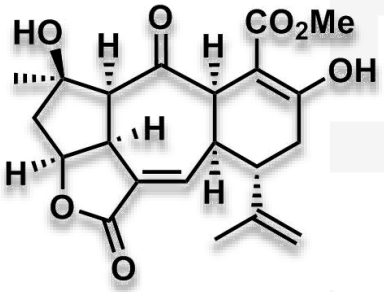


Mandapamate

Synthetic Methodology Development



Drug Discovery & Delivery

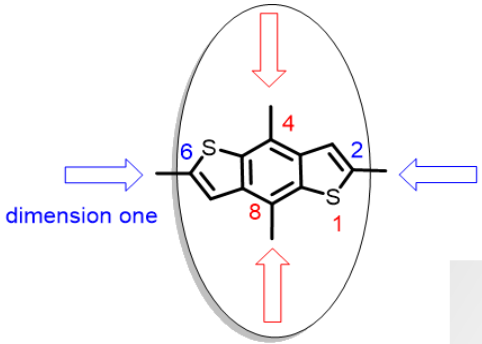


Rameswaralide

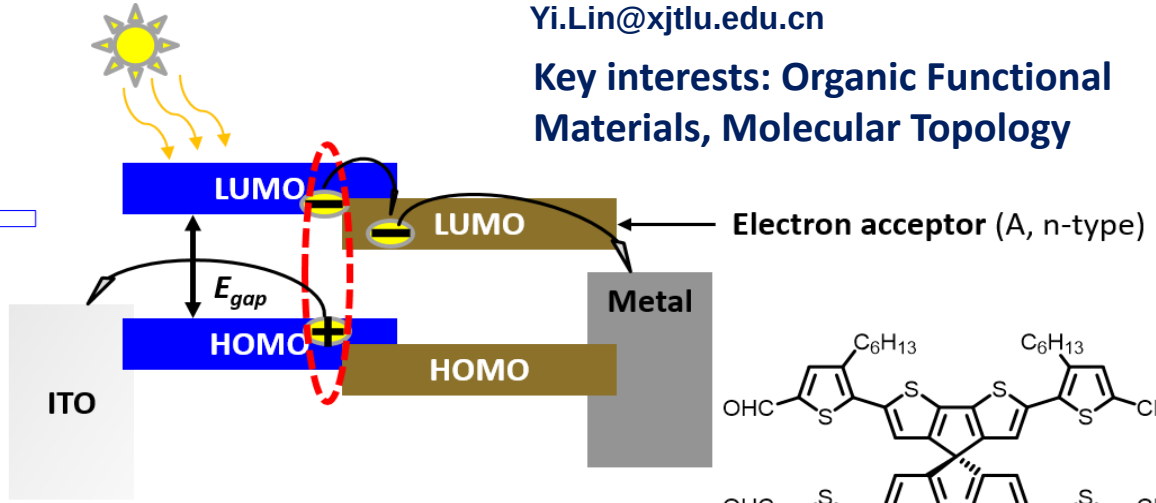
Dr. Yi Lin

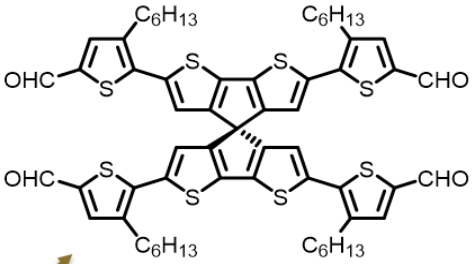
Yi.Lin@xjtlu.edu.cn

Key interests: Organic Functional Materials, Molecular Topology



Electron Donor (D, p-type)





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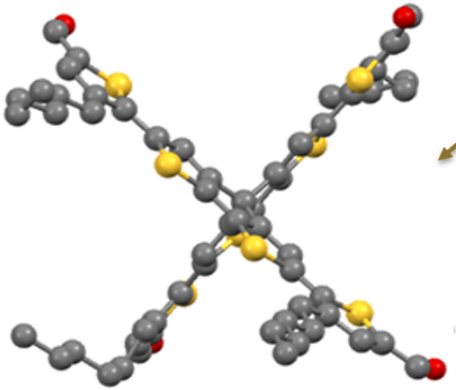
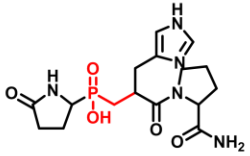


Dr Magdalini Matziari

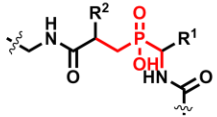
Magdalini.Matziari@xjtlu.edu.cn

Key interests:
Peptide Synthesis

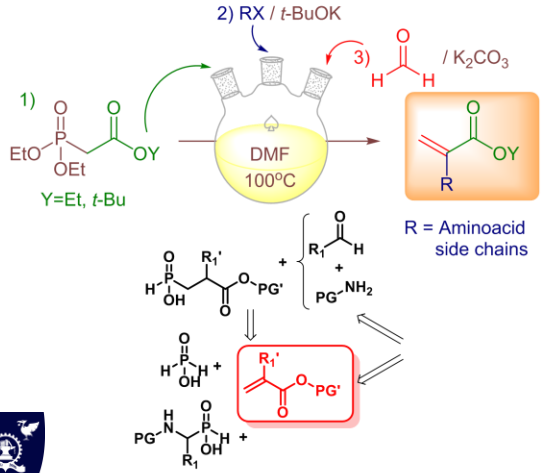
- Thyrotropin analogs

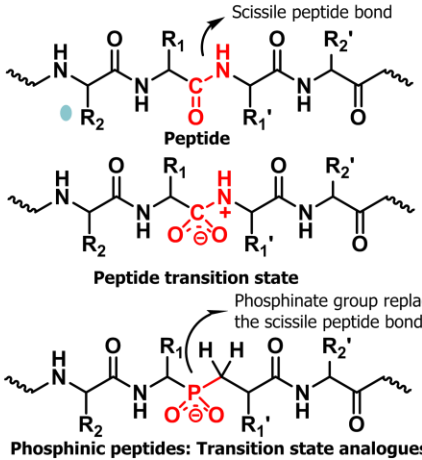


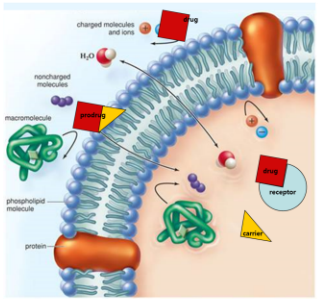
- Hepatitis C inhibitors



- Acrylates one-pot synthesis

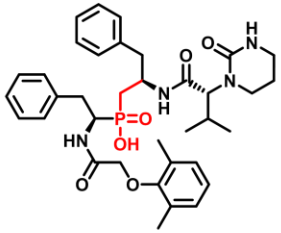




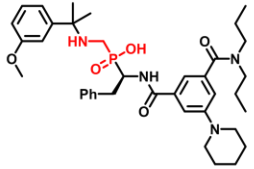


- Prodrugs development

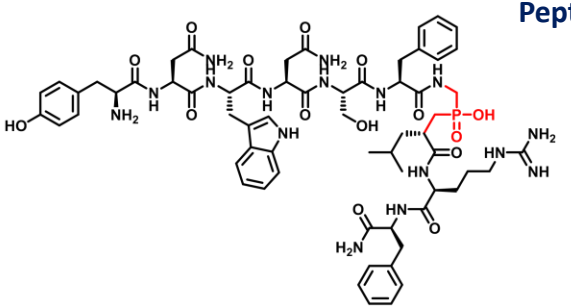
- HIV-1 Inhibitors



- Anti-malarial drugs



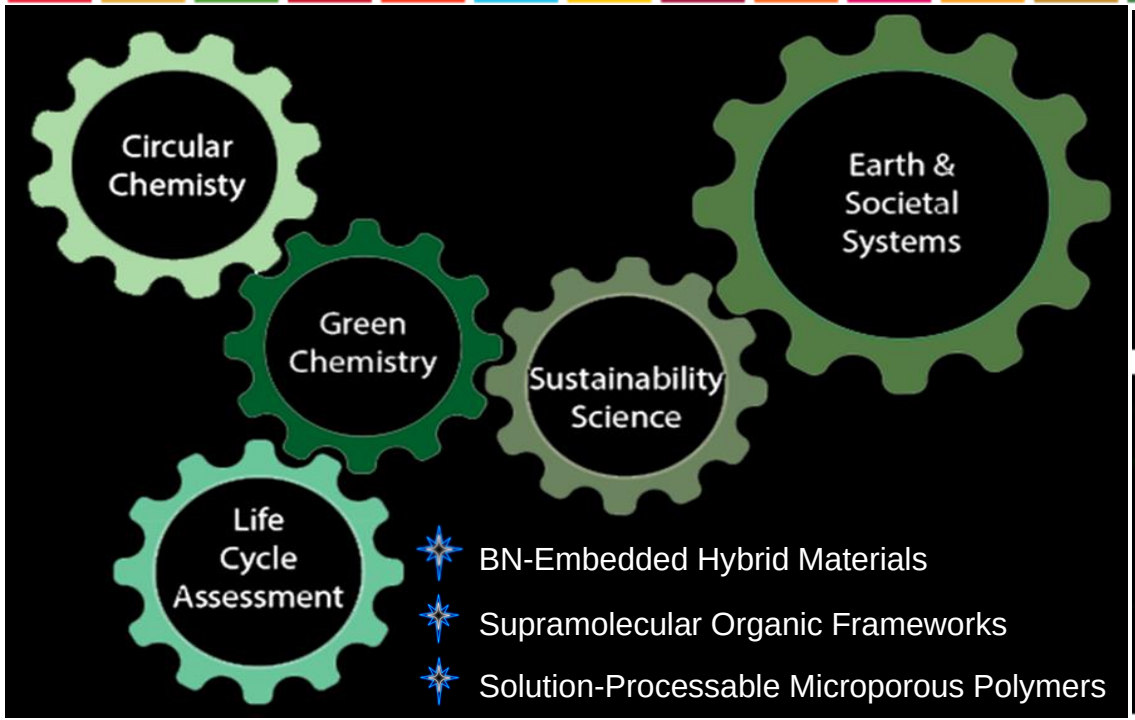
- Kisspeptin-10 analogs

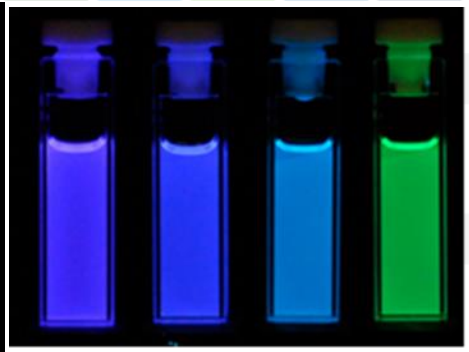


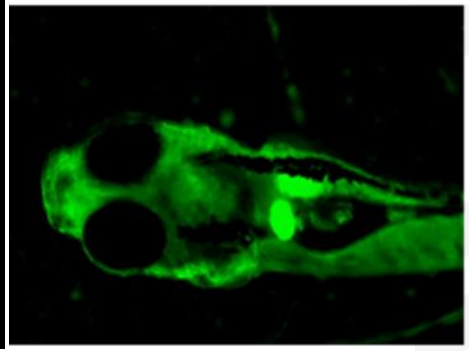
Dr. Hongbo Wang

Hongbo.Wang@xjtlu.edu.cn

Key Interests: Sustainable Chemistry of Optoelectronic Materials





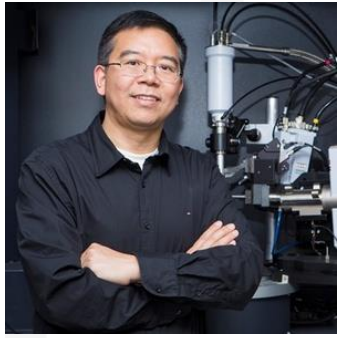


Recent Publications:

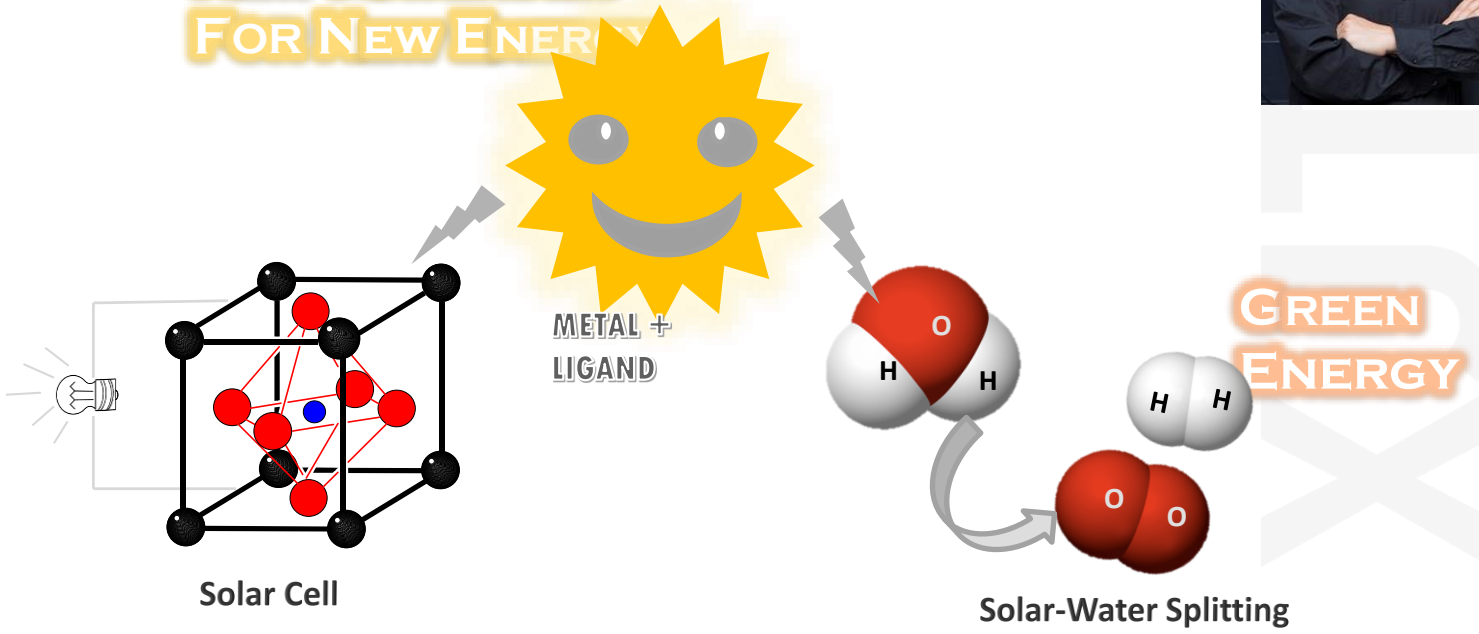
1. *Angew. Chem. Intl. Ed.* 2020, 59, doi: 10.1002/anie.202007588; 2. *Chem. Eng. J.* 2020, 380: 122527

Dr. Ruiyao Wang

Ruiyao.Wang@xjtlu.edu.cn



New Materials
For New Energy



Coordination and
Materials Chemistry

Dr. Li Yang

Li.Yang@xjtlu.edu.cn

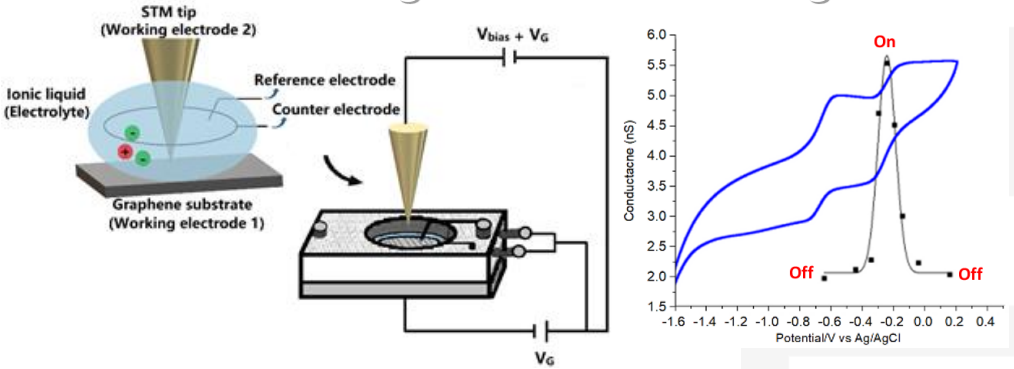
Molecular Electronics

- ❑ Fundamental properties of charge transport
- ❑ Thermoelectric and electrochemical properties of molecular devices

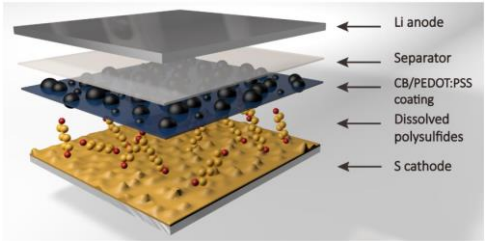
Energy Storage

- ❑ 2D heterostructures for novel electrodes
- ❑ High-performance batteries and supercapacitors
- ❑ Fundamental mechanism of ion transport and electrochemical reactions

Electrochemical Gating to Modulate Switching Behavior



A Novel Cell Configuration: Cathodic Interlayer



1. Nano Letters, 2016, 16, 6534. 2. Journal of Physical Chemistry Letters, 2017, 8, 5987. 3. Electrochimica Acta, 2019, 299, 479.