



2018年度 物質生命理工学科コロキウム

上智大学 理工学部 物質生命理工学科 主催
理工学部・理工学振興会 共催

“*Novel Sensors for Biologically Important Species*”

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2018年 5月 10日 (木曜日) 15:30~16:30 場所：L-821 (図書館内)



Meng Li now is an associate professor at the North China Electric Power University. She obtained her BSc 2011 (East China University of Science and Technology, ECUST), and was a master combined with PhD student 2011-2012 (with Prof. Weihong Zhu in ECUST) and then worked with Prof. Tony D James for her PhD degree at University of Bath from October 2012 till July 2015. She obtained the Global Research Scholarship from University of Bath during her study and visited Ewha Womans University in South Korea (and worked with Prof. Juyoung Yoon) for two months from March 2015. Her research interests comprise of many aspects of supramolecular chemistry, electrochemistry and materials chemistry, including: molecular recognition, electrochemical sensing/energy materials, and structure/functional fibers and their composite materials.

学外の方の聴講歓迎・申込不要・参加無料

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Abstract

Over several decades, fluorescence-based sensors have been extensively investigated owing to their high sensitivity and selectivity and the potential for rapid real-time monitoring of many analytes, including metal ions, nitrites, amino acids, and proteins, *etc.* With the development of sensing technology, conventional solution-based sensing has gradually shown limitations in real applications. In comparison, solid-state sensor materials have some preferred advantages such as portability, operational simplicity, and reusability, which make rapid online detection possible at a low cost. These materials-based probes may be ultimately employed for basic laboratory assays as portable measurement devices and for household use as commercial indicators. Therefore, the quest for ecofriendly materials-based sensors with simple and smart detection is of exceptional importance. Recently, intensive research has been devoted to the development of robust and highly selective and sensitive agents as replacements for conventional sensing molecules. In this regard, cellulose materials such as membranes, nanofibers, and nanocrystals serve as attractive probe candidates. Therefore, cellulose-based materials functionalized with fluorescence sensors are highly topical and are employed in many areas of functional materials, including the sensing of heavy-metal ions and anions as well as being widely used as chemical sensors and tools for environmental applications.

Recent Publications:

1. M. Li, Z. Liu, S. Wang, D. G. Calatayud, W.-H. Zhu, T. D. James, L. Wang, B. Mao, H.-N. Xiao, *Chem. Commun.* **2018**, *54*, 184-187.
2. M. Li, H. Ge, V. Mirabello, R. L. Arrowsmith, G. Kociok-Kohn, S. W. Botchway, W. Zhu, S. I. Pascu, T. D. James, *Chem. Commun.* **2017**, *53*, 11161-11164.
3. M. Li, Z. Liu, H.-C. Wang, A. C. Sedgwick, J. E. Gardiner, S. D. Bull, H.-N. Xiao and T. D. James, *Dyes Pigm.*, **2018**, *149*, 669-675
4. M. Li, Z. Liu, L. Wang, T. D. James, H.-N. Xiao, W.-H. Zhu, *Mater. Chem. Front.* **2017**, *1*, 2317-2323.
5. M. Li, X. Li, H. N. Xiao, T. D. James, *Chemistryopen* **2017**, *6*, 685. (Review)