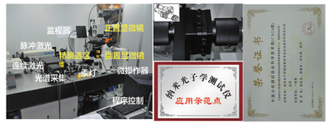
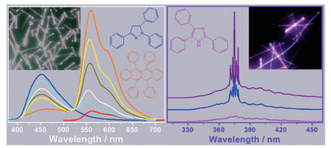
Research Group for Organic Opto-Functional Materials, Institute of Chemistry, Chinese Academy of Sciences



发展了特色的光子学表征技术，提高了我国在纳米光电子学领域的整体创新能力

Developed new techniques for nanophotonic characterizations

This research group pioneered the study of organic low-dimensional optoelectronic materials in the world. For the first time, they found the quantum confinement effect in organic low-dimensional systems, which beaks the traditional cognition on organic aggregates. They subsequently developed the research area of organic nanophotonics, and led this area in the past decade. Aiming at breaking the bottlenecks in the nanophotonic characterization, this group has developed a series of innovative instruments, which have been introduced to quite a few research institutions.



发展了有机纳米光子学的研究方向，最早报导了基于有机单晶纳米线的激光器

Developed the research area of organic nanophotonics,pioneered the study of organic nanowire lasers

Outstanding contributors of this research group

Yao Jiannian

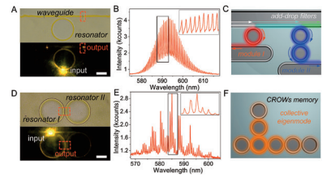
Pioneered the research area of organic low-dimensional optoelectronic materials. Broke the bottle necks in the study of organic nanoscale materials by developing novel techniques for optical characterizations.

Zhao Yongsheng

Pioneered the research of organic nanophotonic materials and devices, especially organic nanoscale lasers. Proposed new strategy for the construction of flexible photonic integrated circuits.

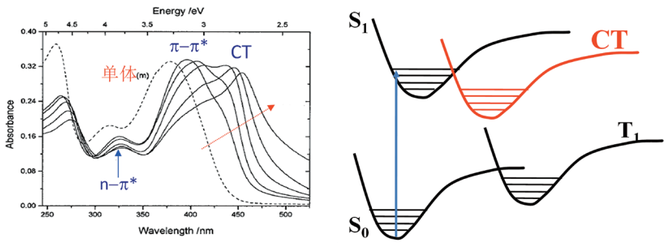
Fu Hongbing

Extended the study of quantum confinement effect to organic nanocrystals. Found the exciton chirality, and size-dependent optical effect of organic low-dimensional materials.



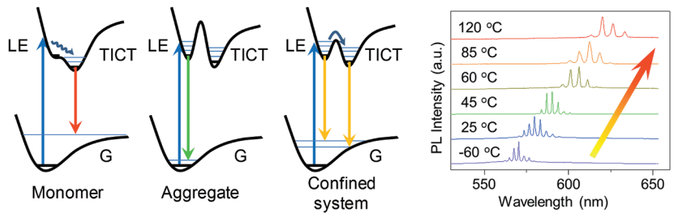
通过打印方法达到了有机柔性光子学集成回路

Prepared organic flexible photonic integrated circuits with ink-jet printing



研究集体首次在有机聚集体中发现基于电荷转移 (CT) 激子的量子限域效应

For the first time, the research group found the quantum confinement effect based on the charge transfer (CT) excitons in organic aggregates

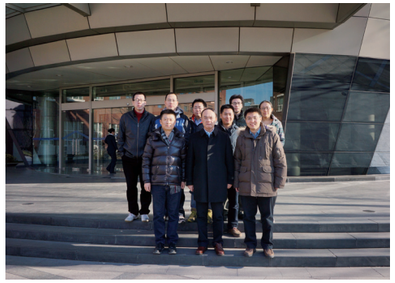


基于有机超分子限域体系发分子内电荷转移，构筑四能级系统，实现波长连续可调的微纳激光

Achieved organic nanoscale lasers with continuously tunable wavelength based on the four-level-structures in organic supramolecular confinement systems

Other members

Zhong Yuwu
Chen Hui
Luo Zhixun
Zhan Chuanlang
Yan Yongli
Wu Yishi
Li Yongjun
Shao Jiangyang
Gong Zhongliang
Jia Meiye



杰出成就奖集体照

Outstanding achievement award

有机光功能材料研究集体

推荐单位：中国科学院化学研究所

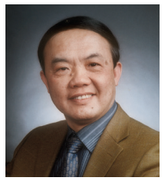
研究集体主要科技贡献：

该研究集体率先开展了低维有机光功能材料的研究工作，在国际上引领了这一领域的发展；首次发现了有机体系中的量子尺寸效应，突破了人们对有机分子聚集体的传统认识，进而发展了有机纳米光子学这一重要的研究方向，在这一方向上该研究集体目前处于国际领先水平；成功研制了若干自主创新的科学仪器，突破了纳米光子学研究中的瓶颈问题，并在国内多家企业和研究机构推广，极大地提高了我国在纳米光电子学领域的整体创新能力。

本集体的研究“低维光功能材料的控制合成与物化性能”获2014年度国家自然科学二等奖

The project of “Controlled synthesis and properties of low-dimensional opto-functional materials” was recognized by the National Natural Science Award in 2014

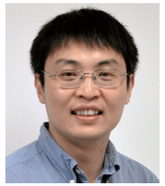
研究集体突出贡献者



姚建年 Yao Jiannian

姚建年 中国科学院化学研究所

主要科技贡献：开创了有机纳米光功能材料的研究方向，引领了二十年来国际上有机低维材料的研究热潮，通过发展先进的表征技术突破了光功能材料研究中的瓶颈问题。



赵永生 Zhao Yongsheng

赵永生 中国科学院化学研究所

主要科技贡献：发展了有机纳米光子学材料与器件，最早报导了有机一维晶体材料的受激发射现象，提出了构筑有机柔性光子学集成回路的新思路。

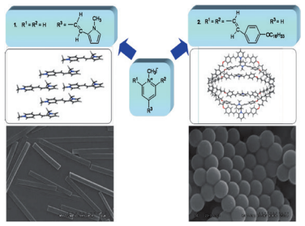
付红兵 Fu Hongbing

付红兵 中国科学院化学研究所

主要科技贡献：将量子尺寸效应的研究从无机半导体拓展到了有机纳晶体系，首次报导了有机低维光功能材料的激子手性、尺寸依赖以及对能带结构的调控作用。

研究集体主要完成者

钟羽武　陈　辉　骆智训　詹传郎　闫永丽　吴义室　李勇军　邵将洋
龚忠亮　贾美叶



通过分子间弱相互作用在分子和超分子尺度的协同效应，实现了有机微纳结构的可控制备

Realized controlled synthesis of organic nanostructures based on the weak intermolecular interactions at molecular and supramolecular dimensions