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南京邮电大学材料科学与工程学院/信息材料与纳米技术研究院副教授、硕士生导师。

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### 个人简历

1999年毕业于吉林大学无机非金属材料系;  
2004年获成都理工大学材料学专业硕士学位;  
2007年获中科院上海应用物理研究所无机化学专业博士学位;  
2007年加盟南京邮电大学，现为副教授、硕士生导师;  
2014年8月赴美国伊利诺伊大学香槟分校化学系进行为期一年的访问研究。

### 研究方向

纳米生物传感、诊疗一体化纳米探针、生物光学成像

### 主要研究项目

- 国家自然科学基金青年基金项目，水溶性共轭聚合物对肿瘤标志物的标记及联合检测研究（21005040），19万，2011.1—2013.12，负责人，结题。
- 江苏省科技厅自然科学基金项目，基于水溶性共轭高分子的肝癌肿瘤标志物检测（BK2008452），7万，2008.12—2010.12，负责人，结题。
- 江苏省自然科学基金项目，MoS<sub>2</sub>纳米探针构建及其在肺癌标志物联合检测中的应用研究（BK20130861），2013.7—2015.6，参与人，在研。
- 南京邮电大学引进人才科研启动基金项目，基于水溶性共轭高分子的乳腺癌相关基因和肿瘤标志物检测（NY207037），5万，2007.12—2009.12，负责人，结题。
- 国家自然科学基金项目，基于水溶性共轭高分子/DNA超分子体系的DNA拓扑识别及其在生物传感中的应用（20804018），2009.1—2011.12，参与人，结题。
- 南京邮电大学物联网重大项目，信息传感核心材料与关键技术（NY211003），2010.9—2015.12，参与人，在研。
- 江苏省科技厅国际合作项目，新型荧光共轭聚合物及其生物传感器研究（BZ2008116）2008.6—2009.12，主要参与人，结题。

### 主要学术成绩

开展了以水溶性共轭聚合物、石墨烯、纳米金等纳米材料为基础的各种光学生物传感检测技术，实现了对肿瘤标志物、有毒重金属离子、DNA、生物小分子等的高灵敏、高特异性检测。以第一或通讯作者在Advanced Materials、Biosensors and Bioelectronics、ACS Appl. Mater. Interfaces、Polymer Chemistry、Analyst等多 种著名学术刊物上发表论文30余篇，单篇最高他引280余次。

### 奖励荣誉

- 2016年度江苏省科学技术二等奖；  
2016年南京邮电大学科学技术一等奖；  
2012年材料学院首届青年教师授课竞赛三等奖。

### 主要代表性著作

- 1.Xingfen Liu, Qiong Li, Peng Gu, Shao Su, Yanqin Huang, Xiaomiao Feng, Quli Fan, and Wei Huang. Highly Sensitive Fluorometric Turn-On Detection of Lysozyme Based on a Graphene Oxide/ssDNA Assembly. IEEE Sensors Journal 2017, 17, 5431-5436.
- 2.Peng Gu, Xingfen Liu, Yuanyuan Tian, Lei Zhang, Yanqin Huang, Shao Su, Xiaomiao Feng, Quli Fan, Wei Huang. A novel visible detection strategy for lysozyme based on goldnanoparticles and conjugated polymer brush. Sensors and Actuators B 2017, 246, 78-84.
- 3.Xingfen Liu, Yateng Wang, Yanqin Huang, Xiaomiao Feng, Quli Fan, Wei Huang. Highly Sensitive Protein Biosensor based on a Conjugated Polymer Brush. Acta Chim. Sinica 2016, 74, 664-668.

- 4.Xingfen Liu, Yateng Wang, Xiaoxiao Hua, Yanqin Huang, Xiaomiao Feng, Quli Fan, Wei Huang. Rapid Detection of Lead Ion (II) Based on Cationic Conjugated Polymer and Aptamer. *Chin. J. Anal. Chem.* 2016, 44, 1092-1098.
- 5.Xingfen Liu, Xiaoxiao Hua, Quli Fan, Jie Chao, Shao Su, Yanqin Huang, Lianhui Wang, Wei Huang. Thioflavin T as an efficient G quadruplex inducer for the highly sensitive detection of thrombin using a new Förster resonance energy transfer system. *ACS Appl. Mater. Interfaces* 2015, 7, 16458-16465.
- 6.Xingfen Liu, Lin Shi, Zhiyong Zhang, Quli Fan, Yanqin Huang, Shao Su, Chunhai Fan, Lianhui Wang, Wei Huang. Monodispersed nanoparticles of conjugated polyelectrolyte brush with high charge density for rapid, specific and label-free detection of tumor marker. *Analyst* 2015, 140, 1842-1846.
7. Xingfen Liu, Yonghong Yang, Xiaoxiao Hua, Xiaomiao Feng, Shao Su, Yanqin Huang, Quli Fan, Lianhui Wang, Wei Huang. An improved turn-on aptasensor for thrombin detection using split aptamer fragments and graphene oxide. *Chin. J. Chem.* 2015, 33, 981-986.
8. Xingfen Liu, Lin Shi, Xiaoxiao Hua, Yanqin Huang, Shao Su, Quli Fan, Lianhui Wang, Wei Huang. Target-induced conjunction of split aptamer fragments and assembly with a water-soluble conjugated polymer for improved protein detection. *ACS Applied Materials & Interfaces* 2014, 6, 3406-3412.
9. Xingfen Liu, Xiaohui Cai, Yanqin Huang, Lin Shi, Quli Fan, Wei Huang. Biotinylated water-soluble conjugated polymers: synthesis and the application in biological analysis. *Acta Chim. Sinica* 2014, 72, 440-446.
- 10.Xingfen Liu, Lan Ouyang, Xiaohui Cai, Yanqin Huang, Xiaomiao Feng, Quli Fan, Wei Huang. An ultrasensitive label-free biosensor for assaying of sequence-specific DNA-binding protein based on amplifying fluorescent conjugated polymer. *Biosens. Bioelectron.* 2013, 41, 218-224.
- 11.Xiaohui Cai, Lin Shi, Xingfen Liu, Yanqin Huang, Quli Fan, Wei Huang. Functionalized conjugated polymers and their application in the biological and/or chemical analysis. *Progress in Chemistry* 2013, 26, 975-989.
- 12.Xingfen Liu, Lan Ouyang, Yanqin Huang, Xiaomiao Feng, Quli Fan and Wei Huang. Highly sensitive detection of DNA-binding proteins based on a cationic conjugated polymer via a target-mediated fluorescence resonance energy transfer (TMFRET) strategy. *Polym. Chem.* 2012, 3, 703-709.
- 13.Xingfen Liu, Likun Miao, Xu Jiang, Yanwen Ma, Quli Fan, Wei Huang. Highly sensitive fluorometric  $Hg^{2+}$  biosensor with a mercury(II)-specific oligonucleotide (MSO) probe and water-soluble graphene oxide (WSGO). *Chinese Journal of Chemistry*, 2011, 29, 1031-1035.
- 14.Xingfen Liu, Quli Fan, Wei Huang. DNA Biosensors based on water-soluble conjugated polymers. *Biosensors and Bioelectronics* 2011, 26, 2154-2164.
- 15.Yanqin Huang, Quli Fan, Xingfen Liu, Nina Fu, Wei Huang. Solvent- and pH-induced self-assembly of cationic meta-linked poly(phenylene ethynylene): effects of helix formation on amplified fluorescence quenching and Förster resonance energy transfer. *Langmuir* 2010, 26, 19120-19128.
- 16.Lihua Wang, Xingfen Liu, Qing Yang, Quli Fan, Shiping Song, Chunhai Fan, Wei Huang. A colorimetric strategy based on a water-soluble conjugated polymer for sensing pH-driven conformational conversion of DNA i-motif structure. *Biosensors and Bioelectronics* 2010, 25, 1838-1842.
- 17.Yanqin Huang, Xingfen Liu, Quli Fan, Lihua Wang, Shiping Song, Lianhui Wang, Chunhai Fan, Wei Huang. Tuning backbones and side-chains of cationic conjugated polymers for optical signal amplification of fluorescent DNA detection. *Biosensors and Bioelectronics* 2009, 24, 2973-2978.
- 18.Jiang Li, Shiping Song, Xingfen Liu, Lihua Wang, Dun Pan, Qing Huang, Yun Zhao, Chunhai Fan. Enzyme-based multi-component optical nanoprobes for sequence-specific detection of DNA hybridization. *Advanced Materials* 2008, 20, 497-500.
- 19.Xingfen Liu, Lihua Wang, Juan Zhang, Shiping Song, Shu Wang, Chunhai Fan. Optical detection of mercury (II) in aqueous solutions using conjugated polymers and label-free oligonucleotides. *Advanced Materials* 2007, 19, 1471-1474.
- 20.Jing Wang, Lihua Wang, Xingfen Liu, Zhiqiang Liang, Shiping Song, Wenxin Li, Genxi Li, Chunhai Fan. A gold nanoparticle-based aptamer target binding readout for ATP assay. *Advanced Materials* 2007, 19, 3943-3946.