

# Curriculum Vitae

## Prof. Dr. Xu-dong Wang

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### Professional Experience

- Member of Permanent Steering Committee for Europt(r)ode Conference

### Research Experience:

- **Full Professor** in Fudan University, Department of Chemistry, Shanghai, China (2015.10-)
- **Senior Research Scientist** in Karlsruhe Institute of Technology (KIT), Institute for Biological Interfaces, Karlsruhe, Germany (2013.09-2015.10).
- **Alexander von Humboldt Fellow** in the Institute for Analytical Chemistry, Chemo- and Biosensors, University of Regensburg, Regensburg, Germany (2011.08-2013.06). *Tutor:* Prof. Dr. [Otto S. Wolfbeis](#).
- **Visiting Scientist** in the Institute for Analytical Chemistry, Chemo- and Biosensors, University of Regensburg, Regensburg, Germany (2009.10-2010.04, DAAD scholarship). *Tutor:* Prof. Dr. [Otto S. Wolfbeis](#).
- **Ph.D** in Analytical Chemistry, Department of Chemistry and Chemical Engineering, Xiamen University, Xiamen, P. R. China, 2011.
- **B. S.** in Chemistry, Xiamen University, Xiamen, P. R. China, 2006.

### Research Interest:

In-situ and on-site analysis | Optical chemo- and biosensors | Intracellular active-targeting | Luminescence (lifetime) imaging | New analytical methods | Molecular probe design | Novel microscopic techniques.

### Honors and awards:

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|------|---|
| 2014 | Shanghai “Eastern Scholar” distinguished Professor  |
| 2011 | Alexander von Humboldt Fellowship<br>Excellent Graduated Student Award in Xiamen University                   |
| 2010 | Zhonghe Scholarship in Xiamen University  |
| 2009 | Excellent Students Award in Xiamen University<br>First-class China Ping’an Encouragement Scholarship in China |
| 2008 | Excellent Students Award in Xiamen University<br>Jingda Nano-technology Scholarship in Xiamen University      |
| 2005 | National Training Base Scholarship in Xiamen University   |

2004            The Activist of Social Practice award in Xiamen University  
2003            National Training Base Scholarship in Xiamen University

**English Proficiency:**

- IELTS: Total: 7.5    Listening: 8; Reading: 8.5; Writing: 6.5; Speaking: 7.5

**Other Professional Skills:**

- ❖ Operations of Scanning Electron Microscopy, Transmission Electron Microscopy, and Laser Confocal Fluorescence Microscopy.
- ❖ Operations of Infra-Red spectrometer, UV-Vis spectrometer and Fluorescence spectrometer.
- ❖ Gas Chromatography and High Performance Liquid Chromatography Analysis.
- ❖ Electro-Chemistry Analysis and Electrogenerated Chemiluminescence Analysis.

## List of Publications: (\* Corresponding Author)

### 2019

- 45 Xu-dong Wang\*, Otto S. Wolfbeis. Fiber-optic Chemical Sensors and Biosensors (2015-2019). *Anal. Chem.*, 2019, DOI: 10.1021/acs.analchem.9b04708.
- 44 Longjiang Ding, Wei Zhang, Yinglu Zhang, Zhenzhen Lin and Xu-dong Wang\*. Luminescent Silica Nanosensors for Lifetime Based Imaging of Intracellular Oxygen with Millisecond Time Resolution. *Anal. Chem.* **2019**, 91, 24, 15625-15633.
- 43 Xiao-Ai Zhang, Wei Zhang, Qi Wang, Junli Wang, Guo-dong, Ren, **Xu-dong Wang\***. Quadruply-labeled serum albumin as a biodegradable nanosensor for simultaneous fluorescence imaging of intracellular pH values, oxygen and temperature. *Microchimica Acta* **2019**, 186, 584.
- 42 Yinglu Zhang, Liang Chen, Zhenzhen Lin, Longjiang Ding, Xufeng Zhang, Ruihua Dai, Qiang Yan, and **Xu-dong Wang\***. Highly sensitive dissolved oxygen sensor with sustainable anti-fouling, anti-abrasion and self-cleaning superhydrophobic surface. *ACS Omega*, **2019**, 4, 1715.

### 2018

- 41 Wei Zhang, Y. G. Abou El-Reash, Longjiang Ding, Zhenzhen Lin, Ying Lian, Bo Song, Jingli Yuan, **Xu-dong Wang\***. A lysosome-targeting nanosensor for simultaneous fluorometric imaging of intracellular pH values and temperature. *Microchimica Acta*, **2018**, 185, 533.
- 40 Yinglu Zhang, Longjiang Ding, Wei Zhang, Xiao-ai Zhang, Ying Lian, **Xu-dong Wang\***. A background-subtraction strategy leads to ratiometric sensing of oxygen without recalibration. *Analyst*, **2018**, 143, 5120-5126
- 39 Longjiang Ding, Siyu Chen, Wei Zhang, Yinglu Zhang, **Xu-dong Wang\***. Fully-reversible optical sensor for hydrogen peroxide with fast response. *Anal. Chem.* **2018**, 90, 7544-7551.
- 38 Ying Lian, Long-Jiang Ding, Wei Zhang, Xiao-ai Zhang, Ying-Lu Zhang, Zhen-zhen Lin, **Xu-dong Wang\***. Synthesis of Highly Stable Cyanine-Dye-doped Silica Nanoparticle for Biological Applications. *Methods Appl. Fluoresc.* **2018**, 6, 034002.

### 2017

- 37 Wei Zhang, Minyan Ma, Xiao-ai Zhang, Ze-yu Zhang, Sayed M. Saleh, and **Xu-dong Wang\***. Fluorescent proteins as efficient tools for evaluating the surface PEGylation of silica nanoparticles. *Methods Appl. Fluoresc.* **2017**, 5, 024003.

### 2016

- 36 **Xu-dong Wang\***, Robert J. Meier, Michael Sch äferling, Sebastian Bange, John M. Lupton, Michaela Sperber, Joachim Wegener, Vladimir Ondrus, Uwe Beifuss, Ulrich Henne, Christian Klein, and Otto S. Wolfbeis\*. Two-Photon Excitation Temperature Nanosensors Based on a Conjugated Fluorescent Polymer Doped with a Europium Probe. *Adv. Opt. Mater.*, **2016**, 4, 1854–1859
- 35 **Xu-dong Wang\***, and O. S. Wolfbeis\*. Fiber-optic Chemical and Biosensors (2013-2015). *Anal. Chem.* **2016**, 88, 203–227.

### 2015

34. **Xu-dong Wang**, Kersten S. Rabe, Ishtiaq Ahmed, Christof M. Niemeyer\*. Multifunctional silica nanoparticles for covalent immobilization of highly sensitive proteins. *Adv. Mater.*, **2015**, 27, 7945-7950
33. Jingbin Zeng, Yingying Cao, Chun-hua Lu, **Xu-dong Wang**, Qianru Wang, Congying Wen,

Cun-guang Yuan, Zifeng Yan, Xi Chen. A colorimetric assay for measuring iodide using Au@Ag core-shell nanoparticles coupled with Cu<sup>2+</sup>. *Anal. Chim. Acta*. **2015**, 891, 269-276.

32. **Xu-dong Wang\***, R. J. Meier, Carina Schmittlein, Stephan Schreml, Michael Schäferling, O. S. Wolfbeis, A water-sprayable, thermogelating and biocompatible polymer host for use in fluorescent chemical sensing and imaging of oxygen, pH values and temperature. *Sens. Actuators B*, **2015**, 221, 37-44.

## 2014

31. **Xu-dong Wang**, O. S. Wolfbeis\*. Optical Methods for Sensing and Imaging of Oxygen. *Chem. Soc. Rev.* **2014**, 43, 3666-3761.
30. Jing-bin Zeng, Shi-guang Fan, Cui-ying Zhao, Qian-ru Wang, Ting-yao Zhou, Xi Chen, Zi-feng Yan, Yan-peng Li, Wei Xing and **Xu-dong Wang\***. A colorimetric agarose gel for formaldehyde measurement based on nanotechnology involving Tollens reaction. *Chem. Comm.* **2014**, 50, 8121-8123.
29. Zhuangqiang Gao, Kaichao Deng, **Xu-dong Wang**, Manuel Miró, Guonan Chen, and Dianping Tang\*. A High-Resolution Colorimetric Assay for Rapid Visual Readout of Phosphatase Activity Based on Gold/Silver Core/Shell Nanorod. *ACS Appl. Mater. Interfaces*. **2014**, 6, 18243-18250.
28. Jing-bin Zeng, Ying-Ying Cao, Jing-Jing Chen, **Xu-dong Wang**, Jian-Feng Yu, Bin-Bin Yu, Zi-feng Yan, Xi Chen. Au@Ag core/shell nanoparticles as colorimetric probes for cyanide sensing. *Nanoscale*. **2014**, 6, 9939-9943.

## 2013

27. **Xu-dong Wang\***, O. S. Wolfbeis, R. J. Meier\*. Luminescent Sensing and Imaging of Temperature. *Chem. Soc. Rev.* **2013**, 42, 7834-7869.
26. **Xu-dong Wang\***, Robert J. Meier, and Otto S. Wolfbeis\*. Fluorescent pH-Sensitive Nanoparticles in an Agarose Matrix for Imaging of Bacterial Growth and Metabolism. *Angew. Chem. Int. Ed.* **2013**, 52, 406-409.
25. **Xu-dong Wang\***, and O. S. Wolfbeis\*. Fiber-optic Chemical and Biosensors. *Anal. Chem.* **2013**, 85, 487-508.
24. **Xu-dong Wang**, Daniela E. Achatz, Christina Hupf, Michaela Sperber, Joachim Wegener, Sebastian Bange, John M. Lupton, Otto S. Wolfbeis.\* Imaging of Cellular Oxygen via Two-Photon Excitation of Fluorescent Sensor Nanoparticles. *Sens. Actuators B*, **2013**, 188, 257-262.
23. **Xu-dong Wang\***, Judith A Stolwijk, Michaela Sperber, Robert Johannes Meier, Joachim Wegener and Otto S Wolfbeis. Ultra-small, highly stable and membrane-impermeable fluorescent nanosensors for oxygen. *Methods Appl. Fluoresc.* **2013**, 1, 035002.
22. Julian, H.; Robert, J. M.; Alexander, M.; Valentin, S.; Florian, B.; Regina, T.; Christian, B.; Gregor, L.; **Xu-dong, Wang**; Otto, S. W.; Jonathan, J. Ratiometric luminescence 2D in vivo imaging and monitoring of mouse skin oxygenation. *Methods Appl. Fluoresc.* **2013**, 1, 045002.

## 2012

21. **Xu-dong. Wang\***, J. A. Stolwijk, T. Lang, M. Sperber, R. J. Meier, J. Wegener, O. S. Wolfbeis\*. Ultra-Small, Highly Stable, and Sensitive Dual Nanosensors for Imaging Intracellular Oxygen and pH in Cytosol. *J. Am. Chem. Soc.* **2012**, 134, 17011-17014. Highlighted in *JACS Spotlights* (*J. Am. Chem. Soc.* **2012**, 134, 18151-18152).

20. **Xu-dong Wang\***, R. J. Meier, O. S. Wolfbeis\*. A Fluorophore-Doped Polymer Nanomaterial for Referenced Imaging of pH and Temperature with Sub-Micrometer Resolution. *Adv. Funct. Mater.* **2012**, 22, 4202-4207.
19. Lan Luan, Zhi-jie Lin, Xi-wei Liu, **Xu-dong Wang**, X. Chen, Study of Oxygen Effects on Electrochemiluminescence Using Dye-doped Oxygen-resisting Nanobeads. *Analyst* **2012**, 137, 2459-2461.

## 2011

18. **Xu-dong Wang**, H. H. Gorris\*, J. A. Stolwijk, R. J. Meier, D. B. M. Groegel, J. Wegener, O. S. Wolfbeis\*; Self-Referenced RGB Colour Imaging of Intracellular Oxygen. *Chem. Sci.* **2011**, 2, 901-906. Highlighted in *Chemical World*.
17. **Xu-dong Wang**, Chun-yan He, Zhao-xiong Xie, Xi Chen\*. Preparation of reversible colorimetric temperature nanosensors and application in quantitative two-dimensional thermo imaging. *Anal. Chem.* **2011**, 83, 2434-2437.
16. **Xu-dong Wang**, Ting-yao Zhou, Xin-hong Song, Yaqi Jiang, Chaoyong James Yang, Xi Chen\*. Chameleon clothes for quantitative oxygen imaging. *J. Mat. Chem.* **2011**, 21, 17651-17653. Highlighted in *Chemical World* 和 *Education in Chemistry*. RSC “*Hot communication*”.
15. R. J. Meier, S. Schreml, **Xu-dong Wang**, M. Landthaler, P. Babilas, O. S. Wolfbeis, Simultaneous Photographing of Oxygen and pH In Vivo Using Sensor Films. *Angew. Chem.Int. Ed.* **2011**, 50, 10893-6
14. Ting-xiu Ye, **Xu-dong Wang**, Xiao-xia Chen, Ying-xue Zhang, Yan-qin Qu, Xi Chen. Synthesis of Ru(dpp)<sub>3</sub>(ClO<sub>4</sub>)<sub>2</sub> doped polyacrylonitrile nanoparticles and its applications in ratiometric pH sensing. *Journal of Fuzhou University*, **2011**, 39, 765-768.
13. Ting-yao Zhou, Xu-dong Wang, Xi-wei Liu, Xi Chen. Research progress of dual-emission colorimetric luminescent oxygen sensors. *Scientia Sinica Chimica*, **2011**, 41, 678-682.

## 2010

12. **Xu-dong Wang**, Robert J. Meier, Link Martin, Otto S. Wolfbeis\*. Photographing oxygen distribution. *Angew. Chem. Int. Ed.* **2010**, 49, 4907-4909. Highlighted in *NewScientist*.
11. **Xu-dong Wang**, Hai-xu Chen, Yun Zhao, Xi Chen\*, Xiao-ru Wang, Optical oxygen sensors move towards colorimetric determination, *Trends in Anal. Chem.* **2010**, 29, 319-338.
10. Hai-xu Chen, **Xu-dong Wang**, Xin-hong Song, Ting-yao Zhou, Ya-qi Jiang, Xi Chen\*. Colorimetric optical pH sensor production using a dual-color system. *Sens. Actuators B* **2010**, 146, 278-282.
9. Guang-mei Guo, **Xu-dong Wang**, Ting-yao Zhou, Xi Chen\*. Extended detection range for an optical enzymatic glucose sensor coupling with a novel data-processing method. *Science China-Chemistry* **2010**, 53, 1385-1390

## 2009

8. **Xu-dong Wang**, Hai-xu Chen, Zhi-jie Lin, Ting-yao Zhou, Jing-bin Zeng, Zhao-xiong Xie, Xi Chen\*, and Xiao-ru Wang. Optical colorimetric sensor strip for direct readout glucose measurement. *Biosens. Bioelectron.* **2009**, 24, 3702-3705.
7. Zhi-jie Lin, Xiao-mei Chen, Tian-tian Jia, **Xu-dong Wang**, Zhao-xiong Xie, Munetaka Oyama, Xi Chen\*. Fabrication of Colorimetric Electrochemiluminescent Sensor. *Anal. Chem.* **2009**, 81, 830-833.

## 2008

6. **Xu-dong Wang**, Xi Chen\*, Zhao-xiong Xie, and Xiao-ru Wang. Reversible optical sensor strip for oxygen. *Angew. Chem. Int. Ed.* **2008**, 47, 7450-7453. Highlighted in *Nature Materials* (2008, 7, 746) and *Nature Asia Materials* (2008-12-19).
5. **Xu-dong Wang**, Ting-Yao Zhou, Xi Chen\*, Kwok-Yin Wong, Xiao-Ru Wang. An Optical Biosensor for the Rapid Determination of Glucose in Human Serum. *Sens. Actuators B* **2008**, 129, 866–873.
4. Guang-mei Guo, Ling-ling Xin, **Xu-dong Wang**, Yun Zhao, Xi Chen\*. Study on the Fluorescence Characteristics of BOD Sensing Films Immobilizing Different Limnetic Microorganism. *Spectroscopy and Spectral Analysis* **2008**, 28, 2134-2138.
3. Guang-mei Guo, Yun Zhao, Yu-hua Weng, **Xu-dong Wang**, Xi Chen\*, Xiao-ru Wang. Development of Portable Sensing Apparatus for Biochemical Oxygen Demand Determination based on Fluorescent Response. *Chinese J. Anal. Chem.* **2008**, 36(4), 563-566.
2. Ting-yao Zhou, Xu-dong Wang, Yun Zhao, Hai-Xu Chen, Xi Chen. BOD Sensing Film Based on Fluorescence Quenching by Oxygen in Freshwater. *Journal of Xiamen University*, **2008**, 47, 208-212.

## 2007

1. Ling-ling Xin, **Xu-dong Wang**, Guang-mei Guo, Xiao-ru Wang and Xi Chen\*. An Optical Biosensing Film for Biochemical Oxygen Demand Determination in Seawater with an Automatic Flow Sampling System. *Meas. Sci. Technol.* **2007**, 18, 2878-2884.

## Issued Patents:

1. **Xu-dong Wang**, Chun-Yan He, Xi Chen. *Chinese Patent*, **2013**, ZL 2011 1 0009169.X
2. **Xu-dong Wang**, Zhi-jie Lin, Xi Chen. *Chinese Patent*, **2011**, ZL 2008 1 0070625.X
3. **Xu-dong Wang**, Bin Qiu, Guo-nan Chen, Xi Chen. *Chinese Patent*, **2010**, ZL 2007 1 0008762.6
4. **Xu-dong Wang**, Hai-xu Chen, Xi Chen. *Chinese Patent*, **2008**, ZL 2008 1 0071137.0
5. **Xu-dong Wang**, Ling-ling Xin, Hao Hu, Xi Chen. *Chinese Patent*, **2007**, CN 101046447A
6. Li-mei Zhang, **Xu-dong Wang**, Jing-bin Zeng. *Chinese Patent*, **2011**, ZL 2008 1 0071366.2
7. Ting-xiu Ye, Yun Zhao, **Xu-dong Wang**, Xi Chen, Guo-nan Chen. *Chinese Patent*, **2008**, ZL 20081 0070821.7

## Invited Oral Talks:

1. July 23, 2012: Department of Chemistry, Xiamen University, China, [Prof. Yun-bao Jiang](#)
2. Jan. 07, 2013: Max Planck Institute of Biochemistry (Martinsried), [Prof. Petra Schwill](#)
3. Jan. 11, 2013: Laboratoire de Biophotonique et Pharmacologie, CNRS, [Prof. Yves Mely](#)
4. Jan. 16, 2013: Karlsruhe Institute of Technology, [Prof. Christof M. Niemeyer](#)
5. March 04, 2013: Max Planck Institute for the Science of Light (Erlangen), [Prof. Frank Vollmer](#)
6. March 11, 2013: Graz University of Technology, [Prof. Ingo Klimant](#), [AP. Torsten Mayr](#)