

# 个人简历

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职务职称： 特别研究员/博士生导师

研究团队： 双稳态功能材料课题组

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## 学习与工作经历：

2014年4月~2016年10月 日本九州大学 学术研究员 导师： Prof. Osamu Sato

2010年10月~2014年3月 日本九州大学 博士 导师： Prof. Osamu Sato

## 社会兼职：

中国化学会青年化学工作者委员会 委员

## 研究领域：

本课题组隶属于配位化学研究领域，致力于通过合理的分子结构设计，获得具有特殊物理性质的先进功能材料；通过系统的性质研究和结构分析，揭示材料结构-性质之间的有效关系，从而获得新物质、发现新现象、讨论新机理。

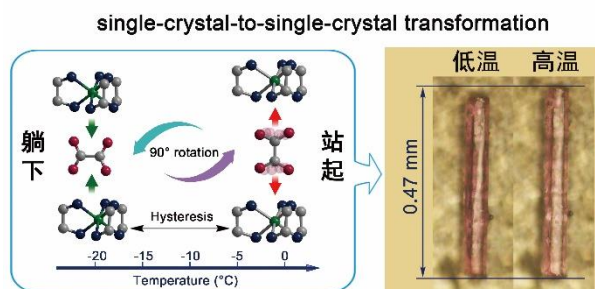
本课题组强调新颖的功能结构设计思路，尽量避免长时间实验台前工作，欢迎对科研有兴趣、喜欢动脑筋的同学加盟我们的团队。

具体研究内容包括但不限于下图中内容：



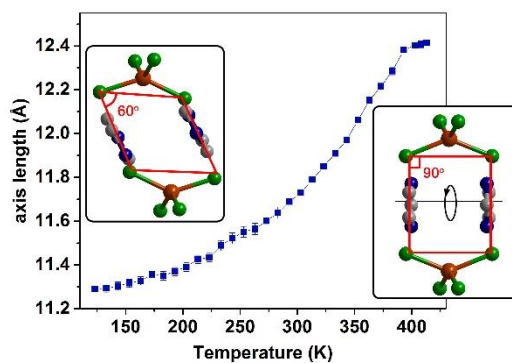
工作发表:

- (1) **Yao, Z.-S.**; Mito, M.; Kamachi, T.; Shiota, Y.; Yoshizawa, K.; Azuma, N.; Miyazaki, Y.; Takahashi, K.; Zhang, K.; Nakanishi, T.; Kang, S.; Kanegawa, S.; Sato, O\*. Molecular motor-driven abrupt anisotropic shape change in a single crystal of a Ni complex. *Nat. Chem.* **2014**, *6*, 1079-1083.



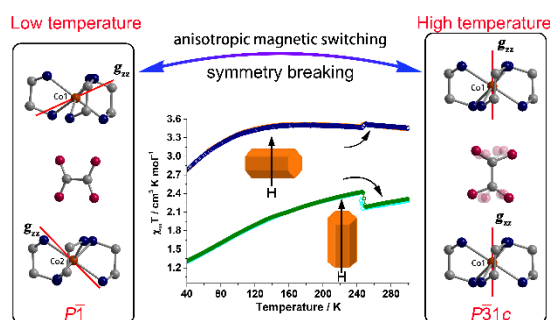
分子陀螺驱动单晶形变

- (2) **Yao, Z.-S.\***; Guan, H.; Shiota, Y.; He, C.-T.; Wang, X.-L.; Wu, S.-Q.; Zheng, X.; Su, S.-Q.; Yoshizawa, K.; Kong, X.; Sato, O.\*; Tao, J.\* Giant anisotropic thermal expansion actuated by thermodynamically assisted reorientation of imidazoliums in a single crystal, *Nat. Commun.* **2019**, *10*, 4805.



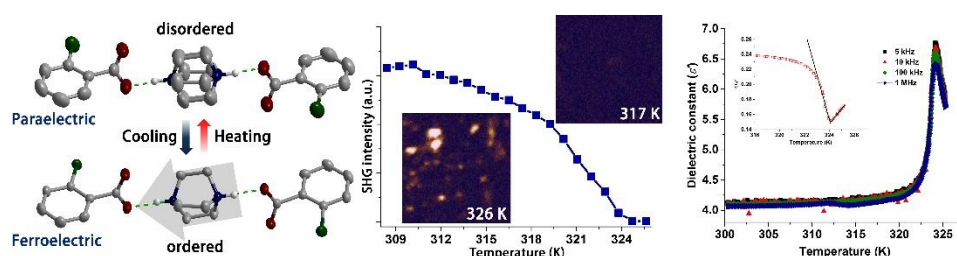
分子轮驱动单晶形变

- (3) **Yao, Z.-S.**; Wu, S.-Q.; Kitagawa, Y.; Su, S.-Q.; Huang, Y.-G.; Li, G.-L.; Ni, Z.-H.; Nojiri, H.; Shiota, Y.; Yoshizawa, K.; Kang, S.; Kanegawa, S.; Sato, O.\* Anisotropic Change in the Magnetic Susceptibility of a Dynamic Single Crystal of a Cobalt(II) Complex. *Angew. Chem. Int. Ed.* **2017**, *56*, 717-721.



各向异性磁性调控

- (4) **Yao, Z.-S.**; Yamamoto, K.; Cai, H.-L.; Takahashi, K.; Sato, O\*. Above Room Temperature Organic Ferroelectrics: Diprotonated 1,4-Diazabicyclo 2.2.2 octane Shifts between Two 2-Chlorobenzoates. *J. Am. Chem. Soc.* **2016**, *138*, 12005-12008.



新型有机铁电体

- (5) Wang, X.-L.; Xue, J.-P.; Sun, X.-P.; Zhao, Y.-X.; Wu, S.-Q.; **Yao, Z.-S.\***; Tao, J. Giant Single-Crystal Shape Transformation with Wide Thermal Hysteresis Actuated by Synergistic Motions of Molecular Cations and Anions, *Chem. Eur. J.* **2020**, *26*, 6778-6783.
- (6) Sun, X.; Tang, Z.; **Yao, Z.-S.\***; Tao, J.\* Homochiral 3D Framework of Mechanically Interlocked 1D Loops with Solvent-Dependent Spin-State Switching Behaviors, *Chem. Commun.* **2020**, *56*, 133-136.
- (7) Ma, T.-T.; Sun, X.; **Yao, Z.-S.\***; Tao, J.\* Homochiral versus Racemic Polymorphs of Spin-Crossover Iron(II) Complexes with Reversible LIESST Effect, *Inorg. Chem. Front.* **2020**, *7*, 1196-1204
- (8) Li, N.; Xue, J.-P.; Liu, J.-L.; Wang, Y.-Y.; **Yao, Z.-S.\***; Tao, J.\* Switchable on-off spin-crossover properties of iron(ii) compounds by trimming intermolecular hydrogen bonds, *Dalton Trans.* **2020**, *49*, 998-1001.

- (9) **Yao, Z.-S.\***; Tang, Z.; Tao, J.\* Bistable molecular materials with dynamic structures, *Chem. Commun.* **2020**, *56*, 2071-2086.
- (10) Xue, J.-P.; Wu, W.-J.; Li, Q.-S.; **Yao, Z.-S.\***; Tao, J.\* A Two-Dimensional Spin-Crossover Coordination Polymer Exhibiting Interlayer Multiple C–H<sup>δ+</sup>···H<sup>δ-</sup>–B Dihydrogen Bonds, *Inorg. Chem.* **2019**, *58*, 15705-15709.
- (11) Wang, C.-F.; **Yao, Z.-S.\***; Yang, G.-Y.; Tao, J.\* Ligand substituent effects on the spin-crossover behaviors of dinuclear iron(II) compounds, *Inorg. Chem.* **2019**, *58*, 1309-1316.
- (12) Sun, X.-P.; Liu, T.; **Yao, Z.-S.\***; Tao, J.\* Spin crossover and photomagnetic behaviors in one-dimensional looped coordination polymers, *Dalton Trans.* **2019**, *48*, 9243-9249.
- (13) Wang, C.-F.; Yang, G.-Y.; **Yao, Z.-S.\***; Tao, J.\* Monitoring the Spin States of Ferrous Ions by Fluorescence Spectroscopy in Spin-Crossover-Fluorescent Hybrid Materials. *Chem. Eur. J.* **2018**, *24*, 3218-3224.
- (14) Sun, X.-P.; Wei, R.-J.; **Yao, Z.-S.\***; Tao, J.\* Solvent effects on the structural packing and spin-crossover properties of a mononuclear iron(II) complex, *Cryst. Growth Des.* **2018**, *18*, 6853-6862.
- (15) Su, S.-Q.; Kamachi, T.; **Yao, Z.-S.**; Huang, Y.-G.; Shiota, Y.; Yoshizawa, K.; Azuma, N.; Miyazaki, Y.; Nakano, M.; Maruta, G.; Takeda, S.; Kang, S.; Kanegawa, S.; Sato, O\*. Assembling an alkyl rotor to access abrupt and reversible crystalline deformation of a cobalt(II) complex. *Nat. Commun.* **2015**, *6*.
- (16) Huang, Y.-G.; Shiota, Y.; Wu, M.-Y.; Su, S.-Q.; **Yao, Z.-S.**; Kang, S.; Kanegawa, S.; Li, G.-L.; Wu, S.-Q.; Kamachi, T.; Yoshizawa, K.; Ariga, K.; Hong, M.-C.; Sato, O\*. Superior thermoelasticity and shape-memory nanopores in a porous supramolecular organic framework. *Nat. Commun.* **2016**, *7*.
- (17) Zhang, K.; Kang, S.; **Yao, Z.-S.**; Nakamura, K.; Yamamoto, T.; Einaga, Y.; Azuma, N.; Miyazaki, Y.; Nakano, M.; Kanegawa, S.; Sato, O\*. Charge-Transfer Phase Transition of a Cyanide-Bridged Fe-II/Fe-III Coordination Polymer. *Angew. Chem.*

*Int. Ed.* **2016**, *55*, 6047-6050.

- (18) Huang, Y.-G.; Shiota, Y.; Su, S.-Q.; Wu, S.-Q.; **Yao, Z.-S.**; Li, G.-L.; Kanegawa, S.; Kang, S.; Kamachi, T.; Yoshizawa, K.; Ariga, K.; Sato, O\*. Thermally Induced Intra-Carboxyl Proton Shuttle in a Molecular Rack-and-Pinion Cascade Achieving Macroscopic Crystal Deformation. *Angew. Chem. Int. Ed.* **2016**, *55*, 14628-14632.
- (19) Wu, S.-Q.; Miyazaki, Y.; Nakano, M.; Su, S.-Q.; **Yao, Z.-S.**; Kou, H.-Z.; Sato, O.\* Slow Magnetic Relaxation in a Mononuclear Ruthenium(III) Complex. *Chem. Eur. J.* **2017**, *23*, 10028-10033.
- (20) Li, G.-L.; Wu, S.-Q.; Zhang, L.-F.; Wang, Z.; Ouyang, Z.-W.; Ni, Z.-H.; Su, S.-Q.; **Yao, Z.-S.**; Li, J.-Q.; Sato, O.\* Field-Induced Slow Magnetic Relaxation in an Octacoordinated Fe(II) Complex with Pseudo-D<sub>2d</sub> Symmetry: Magnetic, HF-EPR, and Theoretical Investigations. *Inorg. Chem.* **2017**, *56*, 8018-8025.
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