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教育背景

香港中文大学（深圳）理工学院 助理研究员（2018-2019）
秋田大学（日本）理工学院 博士后研究员（2014-2018）
东北大学 材料加工工程专业 工学博士（2009-2014）
东北大学 理论物理专业 理学硕士（2007-2009）
东北大学 应用物理专业 理学学士（2003-2007）

研究领域

上转换荧光，无机化学，荧光粉材料，荧光玻璃，熔盐合成。

代表性成果

论文类：

- (1) Y.H. Fan, Y.Z. Cao*, M.L. Li, S. Xu, Y.C. Wang, X.Z. Zhang, J.S. Zhang, B.J. Chen*, Molten salt synthesized Tb^{3+} , Pr^{3+} or Dy^{3+} single doped $CaTa_4O_{11}$ with persistent luminescence, *Physical Chemistry Chemical Physics*, 26 (2024) 28971.
- (2) X.K. Wang, Y.Z. Cao*, X.L. Yan, G.J. Li, X.P. Li, J.S. Zhang, B.J. Chen*, Outstanding green upconversion luminescence in $LaZrTa_3O_{11}:Er^{3+}/Yb^{3+}$ phosphors prepared by molten salt synthesis, *Journal of the American Ceramic Society*, accepted.
- (3) X.K. Wang, Y.Z. Cao*, X.L. Yan, S. Xu, J.S. Zhang, T.S. Liu, B.J. Chen*, Upconversion luminescence of cubic and hexagonal structured $SrTa_4O_{11}:Er^{3+}/Yb^{3+}$ phosphors, *Dalton Transactions*, 53 (2024) 16530-16540.
- (4) L. Li, Y.Z. Cao*, G.J. Li, X.L. Yan, X.K. Wang, X.Z. Zhang, B.J. Chen*, Enhancing upconversion luminescence intensity of $BiTa_7O_{19}:Er^{3+}/Yb^{3+}/Mo^{4+}$ by doping Sc^{3+} or Sb , *Journal of the American Ceramic Society*, 108 (2025) e20160.

- (5) X.L. Yan, Y.Z. Cao*, X.K. Wang, J.S. Zhang, S. Xu, G.J. Li, B.J. Chen*, Molten salt synthesized $\text{LaTa}_7\text{O}_{19}:\text{Er}^{3+}/\text{Yb}^{3+}$ with superior upconversion luminescence using KCl flux, *Journal of Materials Chemistry C*, 12 (2024) 13875-13883.
- (6) X.L. Yan, Y.Z. Cao*, T.S. Liu, X.K. Wang, L. Li, J.S. Zhang, B.J. Chen*, Outstanding blue upconversion luminescence and thermal enhancement behavior in $\text{BiTa}_7\text{O}_{19}:\text{Tm}^{3+}/\text{Yb}^{3+}$ phosphors, *Ceramics International*, 50 (2024) 33995-34004.
- (7) Y.H. Fan, Y.Z. Cao*, T.S. Liu, M.L. Li, S. Xu, J.S. Zhang, B.J. Chen*, Extremely intense pure green upconversion luminescence in $\text{Ho}^{3+}/\text{Yb}^{3+}$ co-doped $\text{BiTa}_7\text{O}_{19}$ phosphors under 980 nm laser excitation, *Applied Physics A* 130 (2024) 462.
- (8) M.L. Li, Y.Z. Cao*, L.H. Cheng, T.S. Liu, Y.H. Fan, J.S. Zhang, B.J. Chen*, Excellent red upconversion luminescence in $\text{GdLaO}_3:\text{Er}^{3+}/\text{Yb}^{3+}/\text{Sc}^{3+}$ under 980 nm laser excitation, *Journal of Materials Chemistry C*, 12 (2024) 6559-6567.
- (9) X.K. Wang, Y.Z. Cao*, Y.B. Mao*, T.S. Liu, X.L. Yan, L. Li, J.S. Zhang, B.J. Chen*, Molten salt synthesized $\text{CaTa}_4\text{O}_{11}:\text{Er}^{3+}/\text{Yb}^{3+}$ with superior upconversion luminescence, *Inorganic Chemistry* 63 (2024) 1439-1448.
- (10) X.L. Yan, Y.Z. Cao*, T.S. Liu, X.K. Wang, L. Li, J.S. Zhang, B.J. Chen*, Order-disorder phase transitions significantly improving the upconversion luminescence intensity of $\text{BiTa}_7\text{O}_{19}:\text{Er}^{3+}/\text{Yb}^{3+}$, *Ceramics International*, 50 (2024) 9433-9440.
- (11) L. Li, Y.Z. Cao*, T.S. Liu, X.L. Yan, X.K. Wang, J.S. Zhang, X.Z. Zhang, B.J. Chen*, Effect of Zn^{2+} , S^{2-} , Mo^{4+} and V^{5+} single doped $\text{BiTa}_7\text{O}_{19}:\text{Er}^{3+}/\text{Yb}^{3+}$ upconversion luminescence intensity under 980 nm laser excitation, *Journal of Luminescence*, 267 (2024) 120341.
- (12) X.K. Wang, Y.Z. Cao*, X.L. Yan, L. Li, X.Z. Zhang, J.S. Zhang, B.J. Chen*, Mn^{2+} doped low melting $\text{K}_2\text{O}-\text{SnO}-\text{P}_2\text{O}_5$ glass for plant cultivation, *Applied Physics A* 129 (2023) 794.
- (13) X.L. Yan, Y.Z. Cao*, K.X. Wang, L. Li, H.Q. Cui, Y.H. Zhang, J.S. Zhang, B.J. Chen*, Luminescence thermal enhancement of Eu^{3+} using charge transfer band excitation in $\text{Li}_6\text{Zn}_3(\text{BO}_3)_4:\text{Eu}^{3+}$ phosphors, *J. Mater Sci: Mater Electron*, 34 (2023) 1967.
- (14) T.X. Peng, Y.Z. Cao*, H.Q. Cui, Y. Li, Y.H. Zhang, L. Li, J.S. Zhang, X.Z. Zhang, B.J. Chen*, Upconversion NIR luminescence negative thermal quenching and temperature sensing in $\text{LiYGeO}_4:\text{Yb}^{3+}/\text{Nd}^{3+}$ phosphors, *Materials Chemistry and Physics*, 309 (2023) 128309.
- (15) L. Li, Y.Z. Cao*, H.Q. Cui, G.J. Li, Y. Li, Y.H. Zhang, J.S. Zhang, B.J. Chen*, Improving upconversion luminescence intensity of $\text{BiTa}_7\text{O}_{19}:\text{Er}^{3+}/\text{Yb}^{3+}$ by polyvalent Sb co-doping, *Dalton Transactions*, 52 (2023) 8770-8777.
- (16) L. Li, Y.Z. Cao*, H.Q. Cui, G.J. Li, Y. Li, J.S. Zhang, B.J. Chen*, Upconversion luminescence thermal enhancement from visible to near

infrared and improving temperature sensitivity under high temperature using a second-harmonic generation response, *Materials Today Chemistry*, 29 (2023) 101487.

(17) H.Q. Cui, Y.Z. Cao*, L. Zhang, Y. Li, Y.H. Zhang, L. Li, J.S. Zhang, B.J. Chen*, Abnormal upconversion luminescence induced by defects and Er³⁺-Yb³⁺ distance change in Cs₃GdGe₃O₉:Er³⁺/Yb³⁺ phosphors, *Journal of the American Ceramic Society*, 106 (2023) 3024-3034.

(18) L. Li, Y.Z. Cao*, Y.H. Zhang, H.Q. Cui, G.J. Li, J.S. Zhang, X.Z. Zhang, B.J. Chen*, Excellent upconversion luminescence intensity in Er³⁺/Yb³⁺/Mo⁴⁺ triple-doped BiTa₇O₁₉ phosphors, *Journal of Alloys and Compounds*, 938 (2023) 168725.

(19) H.Q. Cui, Y.Z. Cao*, Y.H. Zhang, L. Li, G.J. Li, S. Xu, Y.C. Wang, J.S. Zhang, B.J. Chen*, Upconversion luminescence thermal enhancement and emission color modulation of LiYGeO₄:Er³⁺/Yb³⁺ phosphors, *Journal of Alloys and Compounds*, 927 (2022) 167107.

(20) H.Q. Cui, Y.Z. Cao*, Y. Li, L. Li, Y.H. Zhang, G.J. Li, Y.C. Wang, X.P. Li, B.J. Chen*, Upconversion thermal enhancement of ²H_{11/2}→⁴I_{15/2} of Er³⁺ and blue emission of impurity Tm³⁺ in Sr₃(PO₄)₂:Er³⁺/Yb³⁺, *International Journal of Applied Ceramic Technology*, 19 (2022) 3358-3366.

(21) H.Q. Cui, Y.Z. Cao*, Y.H. Zhang, L. Li, G.J. Li, S. Xu, Y.C. Wang, J.S. Zhang, B.J. Chen*, Thermal enhancing effect of upconversion luminescence in Er³⁺/Yb³⁺ co-doped Cs₃BiSr(P₂O₇)₂ phosphors, *Dalton Transactions*, 51 (2022) 12352-12361.

(22) L. Li, Y.Z. Cao*, H.Q. Cui, Y.H. Zhang, G. J. Li, Y.C. Wang, X.P. Li, S. Xu, B.J. Chen*, Upconversion luminescence color modulation and temperature sensing of Na_{0.5}Bi_{2.5}Nb_{2-x}Ta_xO₉:Er³⁺/Yb³⁺ phosphors, *Journal of the American Ceramic Society*, 105 (2022) 6640-6651.

(23) T.X. Peng, Y.Z. Cao*, H.Q. Cui, Y.H. Zhang, Y.C. Wang, X.P. Li, X.Z. Zhang, B.J. Chen*, Rapid screening of up-conversion luminescence phosphors with host containing Yb³⁺ by 980 nm laser radiation, *Optik*, 259 (2022) 169045.

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(26) H.Q. Cui, Y.Z. Cao*, Y.H. Zhang, T.X. Peng, L. Cao, S.Y. Ran, Y.C. Wang, D.Y. Wu, X.P. Li, X.Z. Zhang, B.J. Chen*, Thermal enhancement of up-conversion luminescence in Lu₂W_{2.5}Mo_{0.5}O₁₂:Er³⁺,Yb³⁺ phosphors,

Ceramics International, 47 (15), 21271-21275, 2021.

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(28) H.Q. Cui, Y.Z. Cao*, Y.H. Zhang, L. Cao, S.Y. Ran, X. Wang, D.Y. Wu, X.P. Li, X.Z. Zhang, B.J. Chen*, Extremely intense green up-conversion luminescent and ultra-high temperature sensitivity in Er^{3+}/Yb^{3+} co-doped $BiTa_7O_{19}$ phosphors, Journal of Luminescence, 241, 118484, 2022.

(29) T.X. Peng, Y.Z. Cao*, H.Q. Cui, Y.H. Zhang, Y.C. Wang, X.P. Li, X.Z. Zhang, B.J. Chen*, Enhancement of green upconversion luminescence and temperature sensitivity of $Zr_2(WO_4)(PO_4)_2:Er^{3+},Yb^{3+}$ phosphors by co-doping Li^+ ions, Journal of Alloys and Compounds, 893, 162345, 2022.

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(33) Y.Z. Cao, P. Kumar, Y. Zhao, Y. Suzuki, S. Yoshimura, H. Saito, High magnetization Co-GdO_x superparamagnetic granular films as magnetic coating materials for high-sensitivity alternating magnetic force microscopy tip, Journal of Magnetism and Magnetic Materials, 462, 119-126, 2018.

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with a sensitive FeCo-GdO_x superparamagnetic tip, Journal of Applied Physics, 123, 224503, 2018.

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(39) Y.Z. Cao, Q. Wang, G.J. Li, J.J. Du, C. Wu, J.C. He, Effects of high magnetic field on the structure evolution, magnetic and electrical properties of the molecular beam vapor deposited Fe_xNi_{1-x}(0.3≤x≤0.8) thin films, Journal of Magnetism and Magnetic Materials, 332, 38-43, 2013.

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会议类:

(1) 曹永泽, 王学凯, 闫相兰, 范玉涵, 李美玲, 熔盐法合成层状钽酸盐上转换荧光粉, 第十届全国掺杂纳米材料发光性质学术会议(NMLP2024), 厦门, 口头报告, 2024.11.15-17.

(2) 曹永泽, 李蕾, 王学凯, 闫相兰, Er³⁺/Yb³⁺共掺杂层状钽酸盐的上转换荧光, 第三届全国先进功能材料制备/加工及应用技术交流会, 沈阳, 特邀报告, 2024.8.16-18.

(3) 李蕾, 曹永泽, 陈宝玖, Er³⁺/Yb³⁺掺杂无序层状 α-U₃O₈ 结构 (BiTa)Ta₆O₁₉ 的上转换荧光, 第十六届全国发光学学术会议, 唐山, 口头报告, 2023.9.22-25.

(4) Y.Z. Cao, G. Egawa, S. Yoshimura, H. Saito, Magnetic imaging of DC and AC components of magnetization at fractured surface of Ferrite magnet by alternating magnetic force microscopy (the 40th Annual Conference on Magnetism in Japan, 2016).

(5) Y.Z. Cao, G. Egawa, S. Yoshimura, H. Saito, Development of magnetic imaging for fractured surface of permanent magnets by

alternating magnetic force microscopy with superparamagnetic tip (the 40th Annual Conference on Magnetism in Japan, 2016).

(6) Y.Z. Cao, G. Egawa, S. Yoshimura, H. Saito, Novel static magnetic field imaging with fixed measuring direction for fractured surface of Sr ferrite magnet by alternating magnetic force microscopy with superparamagnetic FeCo-Gd₂O₃ tip (IEEE, Transactions on Magnetism – Conferences, 2017).

(7) Y.Z. Cao, 江川元太, 吉村 哲, 齊藤 準, 槇智仁, 西内武司, 超常磁性探針を利用した交番磁気力顕微鏡によるNdFeB焼結磁石の可逆的な磁壁移動の観察(第160回日本金属学会 春季講演大会, 2017).

(8) Y.Z. Cao, Y. Suzuki, P. Kumar, Y. Zhao, S. Yoshimura, H. Saito, Development of high susceptibility FeCo-Gd₂O₃ superparamagnetic films and its application to magnetic force microscopy (the 4th International Symposium on Advanced Magnetic Materials and Applications (ISAMMA), 2017).

专利类:

(1) 曹永泽, 一种测量磁力显微镜探针杂散场强度的方法, 发明授权 2021 年, 授权公告号: CN 110412488 B。

(2) 曹永泽, 一种硬盘垂直磁写头高频交流磁场的测量装置及方法, 发明授权 2021 年, 授权公告号: CN 111415687 B。

(3) 曹永泽, 崔洪强, 陈宝玖, 一种钪镱共掺杂多磷酸盐上转换发光材料及其制备方法, 发明授权 2023 年, 授权公告号: CN 113861978 B。

(4) 曹永泽, 李蕾, 陈宝玖, 钪镱钼三掺杂 BiTa₇O₁₉ 纯绿色上转换发光材料及其制备方法, 发明授权 2023 年, 授权公告号: CN 114806569 B。

代表性项目

(1) 辽宁省面上基金项目 1 项 2019-2020, 结题, 主持。

(2) 博士后面上基金项目 1 项 2020-2021, 结题, 主持。

(3) 大连市留学创新创业项目 1 项 2022-2024, 在研, 主持。

