

CURRICULUM VITAE

XIAO-JUN WANG

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EDUCATION:

- **Ph.D** in Physics/Laser Spectroscopy, The University of Georgia, June 1992. Athens, GA
Thesis Title: "High-Frequency Nonequilibrium Phonons in Laser Materials."
- **M.S** in Physics, Florida Institute of Technology, December 1987, Melbourne, FL
in Physics, Chinese Academy of Sciences/USTC, April 1985. Beijing, China.
Thesis Title: "Raman Scattering from $\text{Ga}_{1-x}\text{Al}_x\text{As}$ Mixed Crystals."
- **B.S** in Physics, Jilin University, February 1982, Changchun, China.

FIELDS OF SPECIALIZATION:

- Laser Spectroscopy. Nonlinear and Linear Optical and Infrared Properties of Solids, Fluorescence and Optical Scattering Technologies, Semiconductors, Thin Film, and Sol-Gel Materials.
- Dynamic Processes, Ultrafast Pulse, Streakscope and Pump-probe Technologies.
- Biomedical Applications of Lasers and Optics. Optical Imaging Using Optical Coherence Tomography and Optical Doppler Tomography. Optical Properties of Condensed Matter and Bio-Materials.
- Phosphor and Long Persistent Phosphor Preparation. Lasers, from CW Lasers to Femtosecond Pulsed Lasers, Solid, Gas and Dye Lasers. Superradiation Sources. Low-Coherence Light Sources. Optical and Electronic Instrumentation. Computer Interfaces. Weak Signal Detection.

EXPERIENCE:

- ⊕ **7/04-present: Professor; 8/99-7/04: Associate Professor; 9/95-7/99: Assistant Professor** [*Department of Physics, Georgia Southern University, Statesboro, GA*]. Instruct physics and conduct research on the optical properties of luminescent materials.
- ⊕ **5/11-present: Chair Professor, Northeast Normal University**
- ⊕ **7/06~12/10: Guest Professor, Changchun Institute of Physics, Chinese Academy of Sciences.**
- ⊕ **5/03-7/03: Summer Visiting Professor** [*University of Georgia, Department of Physics, Athens, GA*]. Studied laser spectroscopy in phosphor materials.
- ⊕ **5/02-8/02: Summer Visiting Professor** [*University of Georgia, Department of Physics, Athens, GA*]. Studied laser spectroscopy in phosphor materials.
- ⊕ **5/01-8/01: Summer Visiting Professor** [*University of Georgia, Department of Physics, Athens, GA*]. Studied laser spectroscopy in phosphor materials.
- ⊕ **5/00-8/00: Summer Visiting Professor** [*University of Georgia, Department of Physics, Athens, GA*]. Studied laser spectroscopy in phosphor materials.
- ⊕ **8/97-9/97: Summer Visiting Professor** [*University of California, Beckman Laser Institute, Irvine, CA*]. Studied optical birefringence imaging in turbid materials.
- ⊕ **6/96-9/96: Summer Visiting Professor** [*University of California, Beckman Laser Institute, Irvine, CA*]. Studied optical coherence/Doppler tomography in *in-vivo* samples for static structures and blood flow profiles.
- ⊕ **11/93-8/95: NIH Postdoctoral Fellow** [*University of California, Beckman Laser Institute, Irvine, CA*]. Developed optical low-coherence reflectometer & optical Doppler tomographic techniques using fiber optics.
- ⊕ **8/92-11/93: Postdoctoral Researcher** [*Oklahoma State University, University Center for Laser Research, Stillwater, OK*]. Set up and managed advanced ultrafast laser facilities. Investigated

the nonlinear and linear optical properties, energy transfer processes of organic molecule-doped sol-gel materials and chemical sensors. Supervised four graduate students.

- ⌚ **March 93: Training** in femtosecond laser at Lambda Physik, Göttingen, Germany.
- ⌚ **1/88-7/92: Research and Teaching Assistant** [*The University of Georgia, Department of Physics & Astronomy, Athens, GA*]. Studied optical and far infrared laser spectroscopy. Investigated high frequency phonons with temporal, spectral and spatial resolution in laser materials using pump-probe method. Computer simulation studies. Taught undergraduate laboratories in physics and astronomy. Also tutored students in help sessions.
- ⌚ **9/86-12/87: Teaching Assistant** [*Florida Institute of Technology, Department of Physics & Space Sciences, Melbourne, FL*]. Taught undergraduate laboratories in physics, electronics, and optics.
- ⌚ **4/85-9/86: Researcher** [*Chinese Academy of Sciences, Changchun Institute of Physics, Changchun, China*]. Characterized the optical properties of III-V semiconductors. Investigated the disorder effects in mixed crystals and studied the polarization effects of grating spectrometers.

TEACHING EXPERIENCE:

Courses Taught:

Have extensive experience in teaching and developing physics courses at the undergraduate and graduate levels. These courses include:

- 📖 All Introductory Physics PHYS 1111/1112/2111/2112 (texts: Serway, Fishbane, and Giccolli)
- 📖 All Introductory Physics Laboratories/PHYS 1113/1114 (text: departmental manual)
- 📖 Analytical Mechanics/PHYS 5151/5151G (text: Fowles and Cassiday)
- 📖 Electromagnetism Theory/PHYS 5152/5152G (texts: Reitz and Good)
- 📖 Solid State Physics (text: Ashcroft & Mermin and Kittel)
- 📖 Quantum Mechanics (text: Cohen-Tannoudji, Diu and Laloe)
- 📖 Biological Physics/PHYS 3539 (texts: Sybesma and own notes)
- 📖 Modern Physics/PHYS 3536/3537 (text: Rohlfs and own notes)
- 📖 Advanced Physics Labs: I, II, and III/PHYS 3420 (text: manual written by Dr. Wang and Dr. Payne)
- 📖 Laser Spectroscopy (texts: Demtroder, Vol. 1 & 2)
- 📖 Luminescence (handouts)
- 📖 Independent Studies

Supervision:

Supervised postdoctoral researchers, graduates, and undergraduate students for research and independent studies. 10 Ph.D students have graduated.

Course Development:

- 📖 PHYS 3539 "Introduction to Biophysics" for the physics, chemistry, and biology majors.
- 📖 PHYS 3420 "Advanced Physics Labs", part I, II, and III offered three consecutive semesters for our majors. Wrote-up all the lab manuals for the experiments (with Dr. Marvin Payne).

AWARDS AND HONORS:

- 🏆 First prize of Science and Technology Award, Jilin Province, 2010 (2nd place in 14 awardees).
- 🏆 Award for Excellence in Research and Creative/Scholarly Activities, Georgia Southern University, 2002 and 2007.
- 🏆 Award for Excellence in Research, College of Science and Technology, 2002.
- 🏆 Award for Hundred Talents Program (oversea) from Chinese Academy of Sciences, 2002.
- 🏆 Fellowship from the National Institutes of Health, 9/95-9/98.
- 🏆 Postdoctoral Fellowship from the National Institutes of Health, 11/93-8/95.
- 🏆 Third prize from the Chinese Academy of Sciences for excellent research, 1988.
- 🏆 Second prize from the Changchun Institute of Physics, Chinese Academy of Sciences for excellent research, 1987.
- 🏆 GSU Faculty Research Committee Award, 1995, 1996, 1998, 1999, 2000, 2001, 2003, 2007, 2010, 2012).
- 🏆 Chair professor, 2010-present.
- 🏆 Guest Professor, CIOMP, Chinese Academy of Sciences, 2006-present

GRANT AWARDS:

- \$ **University Equipment Fund (PI), FluoroLog TCSPC Spectrofluorometer** (\$183,332, 2013)
- \$ **Oak Ridge National Laboratory/DOE (PI), "Scale-up of persistent Phosphor Syntheses & Design of New Phosphor System "** (\$172,636, 6/2008~5/2009)
- \$ **Oak Ridge National Laboratory/DOE (Co-PI), "Infra-red Persistent Phosphors-II"** (\$15,000, 8/2007~12/2007)
- \$ **Oak Ridge National Laboratory/DOE (Co-PI), "Infra-red Persistent Phosphors-I"** (\$50,000, 3/2007~7/2007)
- \$ **Oak Ridge National Laboratory/DOE (Co-PI), "Nano-size Persistent Phosphors"** (\$50,000, 2005~2006)
- \$ **3M Corporation (PI), "Development & Characterizations of Persistent Phosphors"** (\$100,000, 2004~2005).
- \$ **Research Corporation (PI), "Quantum Cutting through Energy Transfer in Rare Earth-Doped Systems,"** (\$71,148, including the matching fund, 9/2002~9/2004)
- \$ **National Science Foundation (Co-PI), "Development of a Widely Tunable High Power Femtosecond Optical System with High Spectral Resolution for Linear/Nonlinear Probe"** (\$281,703, 10/1/96-9/30/99)
- \$ **National Institutes of Health (PI), "Optical Tomography to Monitor Intratumoral Blood Flow"** (\$95,000, 10/1/95-9/30/98)
- \$ **GSU Faculty Research Competition Award (PI),** (\$10,000, 2012; \$3,000, 2011; \$10,000, 2010; \$10,000, Summer 2007; \$3,500, Spring 2003, \$5,000, Summer 2001, \$2,460-fully funded, Fall 2000, \$4,000, Summer 1999, \$2,464, 11/1/98-5/1/99, \$2,500, Summer 1996, \$500, 10/1/95-9/30/96)

MEMBERS:

THE ELECTROCHEMICAL SOCIETY
THE AMERICAN PHYSICAL SOCIETY
AMERICAN ASSOCIATION OF PHYSICS TEACHERS
SIGMA PI SIGMA, THE NATIONAL PHYSICS HONOR SOCIETY

REVIEWER:**JOURNALS & FUNDING AGENCIES/Proposal Review Boards:**

REVIEW MANUSCRIPTS FOR TENS OF JOURNALS, INCLUDING NATURE MATERIALS, APPLIED OPTICS, AMERICAN INSTITUTE OF CHEMICAL ENGINEERING JOURNAL, CHINESE PHYSICS LETTERS, CHINESE JOURNAL OF LUMINESCENCE, CHEMISTRY OF MATERIALS, ELECTROCHEMICAL AND SOLID-STATE LETTERS, IEEE TRANSACTIONS ON MEDICAL IMAGING, JOURNAL OF ALLOYS AND COMPOUNDS, JOURNAL OF APPLIED PHYSICS, JOURNAL OF ELECTROCHEMICAL SOCIETY, JOURNAL OF LUMINESCENCE, JOURNAL OF OPTICAL SOCIETY OF AMERICA, JOURNAL OF PHYSICAL CHEMISTRY, JOURNAL OF PHYSICS, JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, MEDICAL PHYSICS, MATERIALS RESEARCH BULLETIN, OPTICS COMMUNICATIONS, OPTICS EXPRESS, OPTICS LETTERS, OPTICAL MATERIALS, RSC ADVANCES, CRYSTENGCOMM, DALTON TRANSACTIONS, JOURNAL OF MATERIAL CHEMISTRY, CHEMCOMM.

REVIEW OR PANEL REVIEW FOR MANY FUNDING AGENCIES, INCLUDING US NATIONAL SCIENCE FOUNDATION, US NATIONAL INSTITUTES OF HEALTH, ESTONIA SCIENCE FOUNDATION, BELGIUM RESEARCH FOUNDATION (FWO), CHINA NATURAL SCIENCE FOUNDATION, AND US PETROLEUM RESEARCH FOUNDATION.

TEXTBOOKS:

- ❑ *Physics for Scientists and Engineers, 5th ed., Serway & Beichner, 1999. (the most popular book for undergraduate physics. The book has been adopted by Georgia Southern for many years).*
- ❑ *Physics: Calculus, 2nd ed., Eugene Hecht, 2001.*
- ❑ *University Physics, Ronald Lane Reese, Brooks/Cole, 2002*
- ❑ *College Physics, Giambattista, Richardson, and Richardson, McGraw Hill, 2002*

JOURNAL EDITORS:

- ❑ Advisory Board Member, International Conference on Luminescence (2004~present).
- ❑ Guest Editor, the proceedings of the 14th International Conference on Luminescence (ICL' 05).
- ❑ Guest Editor, the proceedings of the 15th International Conference on Dynamical Processes in Excited States of Solids (DPC 05).
- ❑ Guest Editor, Physics and Chemistry of Luminescent Materials, including the 4th Symposium on Persistent Phosphors, Vol 16, Issue 31, 214th ECS Meeting, October 12 - October 17, 2008, Honolulu, HI
- ❑ Editor Board Member, Chinese Journal of Luminescence.
- ❑ Editor Board Member, Light: Science & Applications

PATENTS:

- ❑ PERSISTENT AND NON-PERSISTENT PHOSPHORS BASED ON PERSISTENT ENERGY TRANSFER, US PATENT NO. 6,952,536 (ISSUED ON OCT. 11, 2005).
- ❑ Cr³⁺ DOPED LANTHANUM-GALLATE PHOSPHORS WITH PERSISTENT PHOSPHORESCENCE FOR INFRARED SENSING (ALTERNATIVE TITLE: ADVANCED SOLID-STATE IR EMITTERS) US UTILITY PATENT # 8,323,528 (ISSUED ON DEC. 4, 2012).

BOOK CHAPTERS (2100+ CITATIONS):

- [1]. TE Milner, S Yazdanfar, AM. Rollins, JA Izatt, T Lindmo, Z Chen, J S Nelson, and **XJ Wang**, Doppler Optical Coherence Tomography, book chapter (chapter 8) in "Handbook of Optical Coherence Tomography," edited by BE Bouma and GJ Tearney (Marcel Dekker, New York, 2002).
- [2]. **XJ Wang** and D Jia, Long Persistent Phosphors, book chapter in "Phosphor Handbook," edited by William M. Yen, Shigeo Shionoya, and Hajime Yamamoto (CRC Press, Boca Raton, 2006).
- [3]. D Jia and **XJ Wang**, Nanophosphors, book chapter in "Doped Nanomaterials and Nanodevices," edited by W Chen (American Scientific Publishers, Valencia, CA, 2010).
- [4]. D Jia, S Gehart, L Zamann, D Kern, and **XJ Wang**, Nanophosphors, book chapter in "Encyclopedia of Nanoscience and Nanotechnology," edited by HS Nalwa (American Scientific Publishers, 2010).

REFEREED JOURNAL PAPERS (3800+ CITATIONS, H-INDEX = 32):

- [5]. M Sun, L Ma, BJ Chen, F Steponzki, F Liu, ZW Pan, MK Lei, and **XJ Wang**, "Comparison of Up-converted Emissions in Yb^{3+} , Er^{3+} Co-doped $\text{Gd}_2(\text{WO}_4)_3$ and Gd_2WO_6 Phosphors," *J Lumin* (in press, 2013).
- [6]. YX Liu, L Ma, DT Yan, HC Zhu, XL Liu, HY Bian, H Zhang, and **XJ Wang**, "Effects of Encaged Anions on the Optical and EPR Spectroscopies of RE doped C12A7," *J Lumin* (invited, in press, 2013).
- [7]. HY Bian, YX Liu, DT Yan, HC Zhu, CG Liu, CS Xu, YC Liu, H Zhang, and **XJ Wang**, "Spectral Modulation through Controlling Anions in Nanocaged Phosphors," *J Mater Chem C* DOI: 10.1039/C3TC31446D (2013).
- [8]. XL Liu, YX Liu, DT Yan, HC Zhu, CG Liu, WZ Liu, CS Xu, YC Liu, H Zhang, and **XJ Wang**, "A multiphase strategy for realizing green cathodoluminescence in $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3$ - $\text{CaCeAl}_3\text{O}_7$: Ce^{3+} , Tb^{3+} conductive phosphor," *Dalton Trans* DOI: 10.1039/C3DT51958A (2013).
- [9]. PP Dai, XT Zhang, LL Bian, S Lu, YC Liu, and **XJ Wang**, "Color tuning of $(\text{K}_{1-x}\text{Na}_x)\text{SrPO}_4:0.005\text{Eu}^{2+}$, $y\text{Tb}^{3+}$ blue-emitting phosphors via crystal field modulation and energy transfer," *J Mater Chem C* 1, 4570-6 (2013).
- [10]. YF Liu, X Zhang, ZD Hao, YS Luo, **XJ Wang**, L Ma, JH Zhang, "Luminescence and energy transfer in $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}:\text{Ce}^{3+}$, Mn^{2+} white LED phosphors," *J Lumin* 133, 21-4 (2013).
- [11]. XF Li, J Budai, F Liu, J Howe, JH Zhang, **XJ Wang**, ZJ Gu, CJ Sun, RS Meltzer, ZW Pan, "New yellow $\text{Ba}_{0.93}\text{Eu}_{0.07}\text{Al}_2\text{O}_4$ phosphor for warm-white light-emitting diodes through single-emitting-center-conversion," *Light: Science & Applications* 2, e50; doi:10.1038/lsa.2013.6 (2013).
- [12]. XL Liu, YX Liu, DT Yan, HC Zhu, CG Liu, CS Xu, YC Liu, and **XJ Wang**, "Single-Phased White-Emitting $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3:\text{Ce}^{3+}$, Dy^{3+} Phosphors with Suitable Electrical Conductivity for Field Emission Displays," *J Mater Chem* 22 16839-43 (2012).
- [13]. W Lü, YS Luo, ZD Hao, X Zhang, **XJ Wang**, and JH Zhang, "Spectral tuning and energy transfer in a potential fluorescent lamp phosphor $\text{BaMg}_2\text{Al}_6\text{Si}_9\text{O}_{30}:\text{Eu}^{2+}$," *J Lumin* 132, 2439-42 (2012).
- [14]. W Lü, YS Luo, ZD Hao, X Zhang, **XJ Wang**, and JH Zhang, "A New Dual-Emission Phosphor $\text{Ca}_4\text{Si}_2\text{O}_7\text{F}_2:\text{Ce}^{3+}$, Mn^{2+} with Energy Transfer for Near-UV LEDs," *Mater Lett* 77, 45-7 (2012).
- [15]. W Lü, YS Luo, ZD Hao, X Zhang, **XJ Wang**, and JH Zhang, "Luminescence Investigation and Thermal Stability Study of Eu^{2+} and Eu^{2+} - Mn^{2+} Codoped $(\text{Ba},\text{Sr})\text{Mg}_2\text{Al}_6\text{Si}_9\text{O}_{30}$ Phosphor," *J Alloy Compd* 513, 430-5 (2012).

- [16]. X Zhang, YF Liu, ZD Hao, YS Luo, **XJ Wang**, and JH Zhang, "Yellow-Emitting $(\text{Ca}_2\text{Lu}_{1-x}\text{Ce}_x)(\text{ScMg})\text{Si}_3\text{O}_{12}$ Phosphor and Its Application for White LEDs," *Mater Res Bull* 47, 1149-52 (2012).
- [17]. YF Liu, X Zhang, ZD Hao, YS Luo, **XJ Wang**, and JH Zhang, "Crystal Structure and Luminescence Properties of Lu^{3+} and Mg^{2+} Incorporated Silicate Garnet $[\text{Ca}_{3-(x+0.06)}\text{Lu}_x\text{Ce}_{0.06}](\text{Sc}_{2-y}\text{Mg}_y)\text{Si}_3\text{O}_{12}$," *J Lumin* 132, 1257-60 (2012).
- [18]. JY Yu, X Zhang, ZD Hao, YS Luo, **XJ Wang**, and JH Zhang, "Blue Emission of $\text{Sr}_{2-x}\text{Ca}_x\text{P}_2\text{O}_7:\text{Eu}^{2+}$ for near UV Excitation," *J Alloy Compd* 515, 39-43 (2012).
- [19]. JY Yu, ZD Hao, X Zhang, YS Luo, **XJ Wang**, and JH Zhang, "Dual Color Emissions of $\text{Sr}_{2-x}\text{Ca}_x\text{P}_2\text{O}_7:\text{Eu}^{2+}, \text{Mn}^{2+}$ for near UV Excitation," *J Electrochem Soc* 159, F56-61 (2012).
- [20]. ZD Hao, X Zhang, YS Luo, **XJ Wang**, and JH Zhang, "Photoluminescence Properties of $\text{CaO}:\text{Ce}^{3+}, \text{Na}^+$, a Non-Garnet Yellow-Emitting Phosphor under Blue Light Excitation," *Mater Lett* 68, 443-5 (2012).
- [21]. YP Li, JH Zhang, YS Luo, X Zhang, ZD Hao, and **XJ Wang**, "Color Control and White Light Generation of Upconversion Luminescence by Operating Dopant Concentrations and Pump Densities in $\text{Yb}^{3+}, \text{Er}^{3+}$ and Tm^{3+} Tri-doped Lu_2O_3 Nanocrystals," *J Mater Chem* 21, 2895-2900 (2011).
- [22]. W Lü, ZD Hao, X Zhang, YS Luo, **XJ Wang**, and JH Zhang, "Tunable Full-Color Emitting $\text{BaMg}_2\text{Al}_6\text{Si}_9\text{O}_{30}:\text{Eu}^{2+}, \text{Tb}^{3+}, \text{Mn}^{2+}$ Phosphors Based on Energy Transfer," *Inorg Chem* 50, 7846-7851 (2011).
- [23]. W Lü, ZD Hao, X Zhang, YF Liu, YS Luo, XY Liu, **XJ Wang**, and JH Zhang, " Eu^{2+} -Activated $\text{Ca}_8\text{Zn}(\text{SiO}_4)_4\text{Cl}_2$: An Intense Green Emitting Phosphor for Blue Light Emitting Diodes," *J Electrochem Soc* 158, H124-127 (2011).
- [24]. W Lü, ZD Hao, X Zhang, XY Liu, **XJ Wang**, and JH Zhang, " $\text{Ca}_3\text{Al}_2(\text{SiO}_4)_{3-8}\text{Cl}_{48}:\text{Eu}^{2+}, \text{Mn}^{2+}$: A Potential Phosphor with Energy Transfer for near-UV Pumped White-LEDs," *Opt Mater* 33, 1262-1265 (2011).
- [25]. W Lü, ZD Hao, X Zhang, YS Luo, **XJ Wang**, and JH Zhang, "Intense Green/Yellow Emission in $\text{Ca}_8\text{Zn}(\text{SiO}_4)_4\text{Cl}_2:\text{Eu}^{2+}, \text{Mn}^{2+}$ through Energy Transfer for Blue-LED Lighting," *J Lumin* 131, 2387-2390 (2011).
- [26]. L Ma and **XJ Wang**, "Characteristic Emission in Glutaraldehyde Polymerized Hemoglobin," *J Lumin* 131, 461-464 (2011).
- [27]. JS Zhang, F Liu, BJ Chen, **XJ Wang**, JH Zhang, "Parameterizing Intensity of $4f^2 \rightarrow 4f^2$ Electric-Dipole Transitions in Pr^{3+} Doped LiYF_4 ," *Phys Lett A* 375, 743-746 (2011).
- [28]. JH Zhang, L Wang, Y Jin, X Zhang, ZD Hao, and **XJ Wang**, "Energy Transfer in $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}, \text{Pr}^{3+}$ and $\text{CaMoO}_4:\text{Sm}^{3+}, \text{Eu}^{3+}$ Phosphors," *J Lumin* 131, 329-432 (2011).
- [29]. XM Zhang, CY Cao, CH Zhang, L Chen, JH Zhang, and **XJ Wang**, "Improved Photoluminescence and Afterglow in $\text{CaTiO}_3:\text{Pr}^{3+}$ with Addition of Nanosized SiO_2 ," *Physica B: Condensed Matter* 406, 3891-3895 (2011).
- [30]. Y Jin, JH Zhang, ZD Hao, X Zhang, and **XJ Wang**, "Synthesis and Luminescence Properties of Clew-Like $\text{CaMoO}_4:\text{Sm}^{3+}, \text{Eu}^{3+}$," *J Alloys Compd* 509, L348-L351 (2011).
- [31]. Y Jin, ZD Hao, X Zhang, YS Luo, **XJ Wang**, and JH Zhang, "Dynamical processes of energy transfer in red emitting phosphor $\text{CaMoO}_4:\text{Sm}^{3+}, \text{Eu}^{3+}$," *Opt Mater* 33, 1591-1594 (2011).
- [32]. ZD Hao, JH Zhang, X Zhang, and **XJ Wang**, " $\text{CaSc}_2\text{O}_4:\text{Eu}^{3+}$: A Tunable Full-Color Emitting Phosphor for White Light Emitting Diodes," *Opt Mater* 33, 355-358 (2011).
- [33]. YF Liu, X Zhang, ZD Hao, **XJ Wang**, and JH Zhang, "Generation of broadband emission by incorporating N^{3-} into $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}:\text{Ce}^{3+}$ garnet for high rendering white LEDs," *J Mater Chem* 21, 6354-6358 (2011).
- [34]. YF Liu, X Zhang, ZD Hao, W Lu, XY Liu, **XJ Wang**, and JH Zhang, "Crystal Structure and Luminescence Properties of $(\text{Ca}_{2.94-x}\text{Lu}_x\text{Ce}_{0.06})(\text{Sc}_{2-y}\text{Mg}_y)\text{Si}_3\text{O}_{12}$ Phosphors for White LEDs with Excellent Color Rendering and High Luminous Efficiency," *J Phys D* 44, 075402 (2011).

- [35]. YF Liu, X Zhang, ZD Hao, **XJ Wang**, and JH Zhang, "Crystal Structure and Luminescence Properties of $(\text{Ca}_{2.94-x}\text{Lu}_x\text{Ce}_{0.06})(\text{ScMg})\text{Si}_3\text{O}_{12}$ Phosphors for White LEDs," *Chin J Lumin* 32 (in Chinese), 445-450 (2011).
- [36]. L Wang, X Zhang, ZD Hao, YS Luo, **XJ Wang**, and JH Zhang, "Energy Transfer in $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}, \text{Cr}^{3+}$ and $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}, \text{Pr}^{3+}, \text{Cr}^{3+}$ Phosphors," *Chin J Lumin* (in Chinese) 32, 417-422 (2011).
- [37]. L Wang, X Zhang, ZD Hao, YS Luo, **XJ Wang**, and JH Zhang, "Enriching Red Emission of $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}$ by Codoping Pr^{3+} and Cr^{3+} for Improving Color Rendering of White LEDs," *Opt Exp* 18, 25177-25182 (2010).
- [38]. L Wang, X Zhang, ZD Hao, YS Luo, JH Zhang, **XJ Wang**, "Interionic Energy Transfer in $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}, \text{Pr}^{3+}$ Phosphor," *J Appl Phys* 108, Article Number: 093515 (2010).
- [39]. D Jia, LA Lewis, and **XJ Wang**, " Cr^{3+} -Doped Lanthanum Gallogermanate Phosphors with Long Persistent IR Emission," *Electrochem Solid-State Lett* 13, J32-J34 (2010).
- [40]. WZ Yan, F Liu, YY Lu, **XJ Wang**, M Yin, and ZW Pan, "Near Infrared Long-Persistent Phosphorescence in $\text{La}_3\text{Ga}_5\text{GeO}_{14}:\text{Cr}^{3+}$ Phosphor" *Opt Exp* 18, 20215-20221 (2010).
- [41]. JS Zhang, F Liu, **XJ Wang**, and JH Zhang, "Calculating Line Intensities of $^1\text{S}_0$ Emission through Standard and Modified Judd-Ofelt Theories in Pr^{3+} -doped $\text{CaAl}_{12}\text{O}_{19}$ and $\text{SrAl}_{12}\text{O}_{19}$," *J Phys-Condensed Matter* 22, Article Number: 155501 (2010).
- [42]. XM Zhang, CY Cao, CH Zhang, SY Xie, GW Xua, JH Zhang, and **XJ Wang**, "Photoluminescence and Energy Storage Traps in $\text{CaTiO}_3:\text{Pr}^{3+}$," *Mate Res Bull* 45, 1832-1836 (2010).
- [43]. MY Wang, X. Zhang, ZD Hao, XG Ren, YS Luo, HF Zhao, **XJ Wang**, and JH Zhang, "Long-Lasting Phosphorescence in $\text{BaSi}_2\text{O}_2\text{N}_2:\text{Eu}^{2+}$ and $\text{Ba}_2\text{SiO}_4:\text{Eu}^{2+}$ Phases for X-Ray and Cathode Ray Tubes," *J Electrochem Soc* 157, H178-H181 (2010).
- [44]. MY Wang, X Zhang, ZD Hao, XG Ren, YS Luo, **XJ Wang**, and JH Zhang, "Enhanced Phosphorescence in N Contained $\text{Ba}_2\text{SiO}_4:\text{Eu}^{2+}$ for X-Ray and Cathode Ray Tubes," *Opt Mater* 32, 1042-1045 (2010).
- [45]. YY Wang, ZH Ni, L Liu, YH Liu, CX Cong, T Yu, **XJ Wang**, DZ Shen, ZX Shen, "Stacking-Dependent Optical Conductivity of Bilayer Graphene," *ACS NANO* 4, 4074-4080 (2010).
- [46]. YP Li, JH Zhang, X Zhang, YS Luo, SZ Lu, ZD Hao, **XJ Wang**, "Spectral Probing of Surface Luminescence of Cubic $\text{Lu}_2\text{O}_3:\text{Eu}^{3+}$ Nanocrystals Synthesized by Hydrothermal Approach," *J Phys Chem C* 113, 17705-17710 (2009).
- [47]. ZD Hao, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Blue-Green-Emitting Phosphor $\text{CaSc}_2\text{O}_4:\text{Tb}^{3+}$: Tunable Luminescence Manipulated by Cross-Relaxation," *J Electrochem Soc* 156, H193-H196 (2009).
- [48]. Y Cong, B Li, SM Yue, D Fan, and **XJ Wang**, "Effect of Oxygen Vacancy on Phase Transition and Photoluminescence Properties of Nanocrystalline Zirconia Synthesized by the One-Pot Reaction," *J Phys Chem C* 113, 13974-13978 (2009).
- [49]. Y Cong, B Li, SM Yue, YH Liu, WL Li, and **XJ Wang**, "Characterization and Photoluminescence Properties of Eu^{3+} Doped $3\text{CdO}-\text{Al}_2\text{O}_3-8\text{SiO}_2$ Amorphous System for White Light-Emitting Diodes," *J Phys Chem C* 113, 493-495 (2009, Letter).
- [50]. Y Cong, B Li, SM Yue, LM Zhang, WL Li, and **XJ Wang**, "Enhanced Red Phosphorescence in $\text{MgGeO}_3:\text{Mn}^{2+}$ by Addition of Yb^{3+} Ions," *J Electrochem Soc* 156, H272-H275 (2009).
- [51]. YP Li, JH Zhang, X Zhang, YS Luo, XG Ren, HF Zhao, **XJ Wang**, LD Sun, and CH Yan, "Near-Infrared to Visible Upconversion in Er^{3+} and Yb^{3+} Codoped Lu_2O_3 Nanocrystals: Enhanced Red Color Upconversion and Three-Photon Process in Green Color Upconversion," *J Phys Chem C* 113, 4413-4418 (2009).
- [52]. JS Zhang, F Liu, X Zhang, **XJ Wang**, and JH Zhang, "Direct Calculation of $4f(3)-4f(3)$ Transition Intensities in Nd^{3+} -doped YPO_4 System Involving Explicit Effects of $4f(2)5d$ Configuration," *J Phys-Condensed Matter* 21, Article Number: 095503 (2009).

- [53]. JS Zhang, ZD Hao, X Zhang, YS Luo, XG Ren, **XJ Wang**, and JH Zhang, "Color Tunable Phosphorescence in $\text{KY}_3\text{F}_{10}:\text{Tb}^{3+}$ for X-ray or Cathode-ray Tubes," *J Appl Phys* 106, Article Number: 034915 (2009).
- [54]. YP Li, JH Zhang, X Zhang, YS Luo, SZ Lu, XG Ren, **XJ Wang**, LD Sun, and CH Yan, "Luminescent Properties in Relation to Controllable Phase and Morphology of $\text{LuBO}_3:\text{Eu}^{3+}$ Nano/Microcrystals Synthesized by Hydrothermal Approach," *Chem Mater* 21, 468-475 (2009).
- [55]. XY Sun, JH Zhang, X Zhang, YS Luo, ZD Hao, and **XJ Wang**, "Effect of Retrapping on Photostimulated Luminescence in $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$, Dy^{3+} Phosphor," *J Appl Phys* 105, 013501 (2009).
- [56]. ZG Nie, KS Lim, JH Zhang, and **XJ Wang**, " $\text{Pr}^{3+} {}^1\text{S}_0 \rightarrow \text{Cr}^{3+}$ Energy Transfer and ESR Investigation in Pr^{3+} and Cr^{3+} Activated $\text{SrAl}_{12}\text{O}_{19}$ Quantum Cutting Phosphor," *J Lumin* 129, 844-849 (2009).
- [57]. YY Wang, ZH Ni, **XJ Wang**, JH Zhang, and ZX Shen, "Spectroscopic Properties of Pr^{3+} Doped Transparent Oxyfluoride Glass Ceramic," *Chin J Lumin* (in Chinese), 30, 135-141 (2009).
- [58]. L Chen, JH Zhang, XM Zhang, F Liu, and **XJ Wang**, "Optical Properties of Trivalent Europium Doped $\text{ZnO}:\text{Zn}$ Phosphor under Indirect Excitation of Near-UV Light," *Opt Express* 16, 11795 (2008).
- [59]. Y Cong, B Li, **XJ Wang**, BF Lei, and WL Li, "Synthesis and Optical Property Studies of Nanocrystalline $\text{ZrO}_2:\text{Ti}$ Long-Lasting Phosphors," *J Electrochem Soc* 155, K195-K198 (2008).
- [60]. ZD Hao, ZG Nie, S Ye, RX Zhong, X Zhang, L Chen, XG Ren, SZ Lu, **XJ Wang**, and JH Zhang, "Luminescence and Energy Transfer in Eu^{2+} and Mn^{2+} Co-doped $\text{Ca}_2\text{P}_2\text{O}_7$ for White Light-Emitting Diodes," *J Electrochem Soc* 155, H606-H610 (2008).
- [61]. Y Jin, JH Zhang, SZ Lu, HF Zhao, X Zhang, and **XJ Wang**, "Fabrication of Eu^{3+} and Sm^{3+} Codoped Micro/Nanosized MMoO_4 (M = Ca, Ba, and Sr) via Facile Hydrothermal Method and Their Photoluminescence Properties through Energy Transfer," *J Phys Chem C* 112, 5860-5864 (2008).
- [62]. ZD Hao, JH Zhang, X Zhang X, XG Ren, YS Luo, SZ Lu, and **XJ Wang**, "Intense Violet-Blue Emitting $(\text{CaCl}_2/\text{SiO}_2) : \text{Eu}^{2+}$ Phosphor Powders for Applications in UV-LED Based Phototherapy Illuminators," *J Phys D-Appl Phys* 41, Article Number: 182001 (2008).
- [63]. XY Sun, JH Zhang, X Zhang, YS Luo, and **XJ Wang**, "Long Lasting Yellow Phosphorescence and Photostimulated Luminescence in $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$ and $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$, Dy^{3+} Phosphors," *J Phys D-Appl Phys* 41, Article Number: 195414 (2008).
- [64]. MY Wang, JH Zhang, X Zhang, YS Luo, XG Ren, SZ Lu, XR Liu, and **XJ Wang**, "Photoluminescent Properties of Yellow Emitting $\text{Ca}_{1-x}\text{Eu}_x\text{Si}_2\text{O}_{7-2\delta/3}\text{N}_{2+2\delta/3}$ Phosphors for White Light-Emitting Diodes," *J Phys D-Appl Phys* 41, Article Number: 205103 (2008).
- [65]. JS Zhang, JH Zhang, Feng Liu, and **XJ Wang**, "Direct Calculation of Transition Intensities in $\text{LiYF}_4:\text{Nd}^{3+}$," *Phys Solid State* 50, 1656-1659 (2008).
- [66]. DD Jia, **XJ Wang**, and WM Yen, "Ground-State Measurement of Pr^{3+} in Y_2O_3 by Photoconductivity," *Phys Solid State* 50, 1674-1676 (2008).
- [67]. XY Sun, JH Zhang, X Zhang, YS Luo, and **XJ Wang**, "A Green-Yellow Emitting β - $\text{Sr}_2\text{SiO}_4:\text{Eu}^{2+}$ Phosphor for Near Ultraviolet Chip White-Light-Emitting Diode," *J Rare Earth* 26, 421-424 (2008).
- [68]. XY Sun, JH Zhang, X Zhang, YS Luo, and **XJ Wang**, "Long Lasting Yellow Phosphorescence in $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$ and $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$, Dy^{3+} Phosphors," *Chin J Lumin* (in Chinese), 29, 665-669 (2008).
- [69]. L Chen, JH Zhang, X Zhang, YS Luo, SZ Lu, XG Ren, and **XJ Wang**, "Synthesis and Optical Properties of Eu^{3+} , Li^{+} -codoped $\text{ZnO}:\text{Zn}$ Phosphors," *J Optoelectron Laser* (in Chinese) 19, 632-625 (2008).

- [70]. XM Zhang, JH Zhang, MY Wang, X Zhang, H Zhao, and **XJ Wang**, "Investigation on the Improvement of Red Phosphorescence in $\text{CaTiO}_3 : \text{Pr}^{3+}$ Nanoparticles," *J Limin* 128, 818-820 (2008).
- [71]. ZD Hao, JH Zhang, X Zhang, SZ Lu, YS Luo, XG Ren, and **XJ Wang**, "Phase Dependent Photoluminescence and Energy Transfer in $\text{Ca}_2\text{P}_2\text{O}_7 : \text{Eu}^{2+}, \text{Mn}^{2+}$ Phosphors for White LEDs," *J Limin* 128, 941-944 (2008).
- [72]. YS Luo, JH Zhang, X Zhang, and **XJ Wang**, "Demonstration of Enhanced Population Feeding of the 1.53 μm Emitting Level of Er^{3+} in $\text{TeO}_2\text{-WO}_3\text{-Li}_2\text{O-P}_2\text{O}_5$ Glasses Using Upconversion Luminescence Spectroscopy," *J Appl Phys* 103, Article Number: 063107 (2008).
- [73]. YS Luo, JH Zhang, and **XJ Wang**, "Spectroscopic Properties of the Er^{3+} Doped Tungsten-tellurite Glasses with P_2O_5 ," *Chin J Lumin* (in Chinese), 29, 274-278 (2008).
- [74]. DD Jia, C Shaffer, S Pickering, Shaffer A Goonewardene, and **XJ Wang**, "Behavior of TiO_2 Thin Film in a Nanocapacitor," *J Nanosci Nanotechnol* 8, 1234-1237 (2008).
- [75]. L Chen, JH Zhang, HF Zhao, and **XJ Wang**, "Hydrothermal Synthesis and Luminescent Properties of Microtubes Constructed by Fluffy $\text{ZnS} : \text{Mn}^{2+}$ with Nanostructures," *J Nanosci Nanotechnol* 8, 1326-1329 (2008).
- [76]. RX Zhong, JH Zhang, X Zhang, SZ Lu, XG Ren, and **XJ Wang**, "Red Photoluminescence due to Energy Transfer from Eu^{2+} to Cr^{3+} in $\text{Sr}_3\text{Al}_{10}\text{SiO}_{20}\text{-SrAl}_{12}\text{O}_{19}$ Mixed Phases," *J Appl Phys D-Appl Phys* 41, Article Number: 065104 (2008).
- [77]. XM Zhang, JH Zhang, XG Ren, and **XJ Wang**, "The Dependence of Persistent Phosphorescence on Annealing Temperatures in $\text{CaTiO}_3 : \text{Pr}^{3+}$ Nanoparticles Prepared by a Coprecipitation Technique," *J Solid State Chem* 181, 393-398 (2008).
- [78]. XM Zhang, JH Zhang, Y Jin, HF Zhao, and **XJ Wang**, "Large-scale Fabrication of Pr^{3+} Doped or Undoped Nanosized ATiO_3 ($\text{A} = \text{Ca}, \text{Sr}, \text{Ba}$) with Different Shapes via a Facile Solvothermal Technique," *Cryst. Grow. Design* 8, 779-781 (2008).
- [79]. Y Cong, B Li, BF Lei, **XJ Wang**, CL Liu, JY Liu and WL Li, "Enhancement of Luminescence Intensity and Increase of Emission Lifetime in Eu^{3+} -doped $3\text{CdO-Al}_2\text{O}_3\text{-3SiO}_2$ Amorphous System," *J Limin* 128, 105~9 (2008).
- [80]. XM Zhang, JH Zhang, X Zhang, MY Wang, HF Zhao, SZ Lu and **XJ Wang**, "Size Manipulated Photoluminescence and Phosphorescence in $\text{CaTiO}_3\text{:Pr}^{3+}$ Nanoparticles" *J Phys Chem C* 111, 18044-18048 (2007).
- [81]. SX Yan, JH Zhang, X Zhang, SZ Lu, XG Ren, ZG Nie, **XJ Wang**, "Enhanced Red Emission in $\text{CaMoO}_4\text{:Bi}^{3+}, \text{Eu}^{3+}$," *J Phys Chem C* 111, 13256~60 (2007).
- [82]. ZD Hao, JH Zhang, X Zhang, XY Sun, YS Luo, SZ Lu, and **XJ Wang**, "White Light Emitting Diode by Using $\alpha\text{-Ca}_2\text{P}_2\text{O}_7\text{:Eu}^{2+}, \text{Mn}^{2+}$ Phosphor," *Appl Phys Lett* 90, 261113 (2007).
- [83]. XM Zhang, JH Zhang, ZG Nie, MY Wang, X Zhang, XG Ren, **XJ Wang**, "Enhancement of the Red Phosphorescence in Nanosized $\text{CaTiO}_3\text{:Pr}^{3+}$ Phosphors," *Appl Phys Lett* 90, 151991-1~3 (2007).
- [84]. ZG Nie, JH Zhang, X Zhang, XG Ren, GB Zhang, **XJ Wang**, "Evidence for Visible Quantum Cutting via Energy Transfer in $\text{SrAl}_{12}\text{O}_{19}\text{:Pr}, \text{Cr}$," *Opt Lett* 32, 991-3 (2007).
- [85]. RX Zhong, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Efficient Energy Transfer and Photoluminescent Characteristics in $\text{SrAl}_{12}\text{O}_{19}\text{:Eu}^{2+}, \text{Cr}^{3+}$ Nano-rods," *Nanotechnology*, 18 445707 (2007).
- [86]. D Jia and **XJ Wang**, "Alkali Earth Sulfide Phosphors Doped with Eu^{2+} and Ce^{3+} for LEDs," *Opt Mat.* 30, 375-9 (2007).
- [87]. ZG Nie, JH Zhang, X Zhang, SZ Lu, XG Ren, GB Zhang, **XJ Wang**, "Photon Cascade Luminescence in $\text{CaAl}_{12}\text{O}_{19}\text{:Pr}, \text{Cr}$," *J Solid State Chem* 180, 2933–2941 (2007).
- [88]. LY Hu, B Yan, JH Zhang, and **XJ Wang**, "The Phosphorescent Properties of Er^{3+} in $\text{Gd}_2\text{O}_2\text{S}$ by Two-step Absorption," *J Phys D* 40 7519–7522 (2007).

- [89]. S Ye, JH Zhang, X Zhang, SL Lu, X Ren, and **XJ Wang**, "Mn²⁺ Activated Red Phosphorescence in BaMg₂Si₂O₇: Mn²⁺, Eu²⁺, Dy³⁺ through Persistent Energy Transfer," *J Appl Phys* 101, 063545-1~6 (2007).
- [90]. XM Zhang, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Enhancement of red Fluorescence and Afterglow in CaTiO₃:Pr³⁺ by Addition of Rare Earth Oxides," *Chem Phys Lett* 434, 237-40 (2007).
- [91]. S Ye, JH Zhang, X Zhang, S Lu, XG Ren, and **XJ Wang**, "Mn²⁺ Concentration Manipulated Red Emission in BaMg₂Si₂O₇: Eu²⁺, Mn²⁺" *J Appl Phys* 101, 033513-1~5 (2007).
- [92]. ZG Nie, JH Zhang, YS Luo, SZ Lu, **XJ Wang**, "Spectroscopic Investigation of CaAl₁₂O₁₉: M³⁺ upon UV/vacuum-UV Excitation: A Comparison with SrAl₁₂O₁₉: M³⁺ (M = Pr, Cr)," *J Phys Condens. Matter* 19, 076204-1~12 (2007).
- [93]. S Ye, JH Zhang, X Zhang, **XJ Wang**, "Mn²⁺ Activated Red Long Persistent Phosphors in BaMg₂Si₂O₇," *J Limin* 122/123, 914-916 (2007).
- [94]. ZY He, **XJ Wang**, and WM Yen, "Behavior of Mn²⁺ Ions in the Trapping Process of SrMg(SiO₃)₂:Mn,Dy," *J Limin* 122/123, 381-384 (2007).
- [95]. D Jia, **XJ Wang**, W Jia, and WM Yen, "Trapping Processes of 5d Electrons in Ce³⁺ doped SrAl₂O₄," *J Limin* 122/123, 311-314 (2007).
- [96]. XM Zhang, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Enhancement of red Fluorescence and Afterglow in CaTiO₃:Pr³⁺ with Lu₂O₃ Addition," *J Limin* 122/123, 958-960 (2007).
- [97]. XY Sun, JH Zhang, X Zhang, SZ Lu, **XJ Wang**, "A White Light Phosphor Suitable for Near Ultraviolet Excitation," *J Limin* 122/123, 955-957 (2007).
- [98]. YS Luo, JH Zhang, SZ Lu, and **XJ Wang**, "Optical Properties of Er³⁺ Doped Telluride Glasses with P₂O₅ Addition for 1.5μm Broadband Amplifiers," *J Limin* 122/123, 967-969 (2007).
- [99]. F Liu, JH Zhang, SZ Lu, SX Liu, SH Huang, **XJ Wang**, "Calculating Line Intensities of ¹S₀ Emission through Mixing with 4f5d Components in Pr³⁺ Doped SrAl₁₂O₁₉," *J Limin* 122/123, 434-436 (2007).
- [100]. F Liu, JH Zhang, SZ Lu, SX Liu, SH Huang, and **XJ Wang**, "Explicit Effects of 4f5d Configuration on 4f²→4f² Electric Dipole Transitions in Pr³⁺-doped SrAl₁₂O₁₉," *Phys Rev B* 74, 115112 (2006).
- [101]. RX Zhong, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Red Phosphorescence in Sr₄Al₁₄O₂₅:Cr³⁺, Eu²⁺, Dy³⁺ through Persistent Energy Transfer," *Appl Phys Lett* 88, 201916 (2006).
- [102]. F Liu, JH Zhang, SZ Lu, and **XJ Wang**, "Intensity Parameterization of 4f²→4f² Electric Dipole Transitions in Pr³⁺ in SrAl₁₂O₁₉," *Acta Phys Sin.* 55, 6020-6024 (2006).
- [103]. HY Chen, JH Zhang, **XJ Wang**, Y Nie, S Gao, MZ Zhang, YM Ma, QQ Dai, D Li, S Kan and GT Zou "K₂SO₄ Nanowires a Good Nanostructured Template," *Phys Lett A* 355, 222-227 (2006).
- [104]. JT Sun, JH Zhang, YS Luo, SZ Lu, XG Ren, BJ Chen, and **XJ Wang**, "Thermal Stability and Spectral Properties of Er³⁺-Doped Gadolinium Borosilicate Glasses," *Opt Mater.* 28, 306–309 (2006).
- [105]. YS Luo, JH Zhang, JT Sun, SZ Lu, and **XJ Wang**, "Spectroscopic Properties of Tungsten–Tellurite Glasses Doped with Er³⁺ Ions at Different Concentrations," *Opt Mater.* 28, 255–258 (2006).
- [106]. HR Zheng, **XJ Wang**, SX Qu, MJ Dejneka, and RS Meltzer, "Dynamical Processes of Ln³⁺ Ions Doped in LaF₃ Nanocrystals Embedded in Transparent Oxyfluoride Glass," *J Limin* 119/120, 153-160 (2006).
- [107]. ZY He, **XJ Wang**, and WM Yen, "Investigation on Charging Processes and Phosphorescent Efficiency of SrAl₂O₄:Eu,Dy," *J Limin* 119/120, 309-313, (2006).
- [108]. RX Zhong, JH Zhang, X Zhang, SZ Lu, and **XJ Wang**, "Energy Transfer and Red Phosphorescence in Strontium Aluminates Doped with Cr³⁺, Eu²⁺, and Dy³⁺," *J Limin* 119/120, 327-331 (2006).

- [109]. **XJ Wang**, SH Huang, JH Zhang, and WM Yen, "Spectral Properties and Quantum Efficiency of Optical Emission in Rare Earth Doped Crystals," *J Phys Conference Series* 28, 18–24 (2006) (invited).
- [110]. D Jia, **XJ Wang**, W Jia, and WM Yen, "Temperature Dependent Photoconductivity of Ce³⁺ doped SrAl₂O₄," *J Limin* 119/120, 55-58 (2006).
- [111]. HY Chen, JH Zhang, **XJ Wang**, SY Gao, MZ Zhang, YM Ma, QQ Dai, DM Li, SH Kan, GT Zou, "The Effect of the Size of Raw Gd(OH)₃ Precipitation on the Crystal Structure and PL Properties of Gd₂O₃:Eu," *J Colloid Interface Sci* 297, 130–133 (2006).
- [112]. F Liu, JH Zhang, SZ Lu, SX Liu, SH Huang, and **XJ Wang**, "Selection rules for 4f²→4f² electric dipole transitions by considering mixing with 4f5d components of Pr³⁺ in SrAl₁₂O₁₉," *J Limin* 119/120, 492-495 (2006).
- [113]. ZG Nie, JH Zhang, YS Luo, SZ Lu, **XJ Wang**, "Energy Transfer in Pr³⁺- and Cr³⁺-Codoped SrAl₁₂O₁₉ System," *J Limin* 119/120, 332-336 (2006).
- [114]. BF Lei, B Li, **XJ Wang**, and WL Li, "Green emitting long lasting phosphorescence (LLP) properties of Mg₂SnO₄:Mn²⁺ phosphor," *J Limin* 118, 173-178 (2006).
- [115]. L Chen, JH Zhang, SZ Lu, XG Ren, and **XJ Wang**, "Observation of Energy Transfer from Nanocrystalline ZnS to Tb³⁺ Ions on the Surface of the Nanoparticles Synthesized in Reverse Micelles," *Chem Phys Lett* 409, 144-8 (2005).
- [116]. CX Meng, SH Huang, FT You, Y Tao, JH Xu, GB Zhang, **XJ Wang**, MJ Dejneka, WM Yen, "Spectroscopy of Pr³⁺ 4f5d Configuration in LaF₃ Nanocrystals/Oxyfluoride Glass Ceramics," *J Rare Earths* 23, 319-322 (2005).
- [117]. **XJ Wang**, ZY He, D Jia, W Strek, R Pazik, D Hreniak, and W M Yen, "Crystal Size Dependence of the Persistent Phosphorescence in Sr₂ZnSi₂O₇: Eu²⁺, Dy³⁺," *Microelec J* 36, 546-8 (2005).
- [118]. JT Sun, JH Zhang, SZ Lu, XG Ren, and **XJ Wang**, "Preparation and Optical Properties of Er³⁺-Doped Gadolinium Borosilicate Glasses," *J Rare Earths* 23, 153 (2005).
- [119]. XY Sun, JH Zhang, X Zhang, SX Liu, DP Jiang, and **XJ Wang**, "A Single White Phosphor Suitable for Near Ultraviolet Excitation Applied to New Generation White LED Lighting," *Chin J Lumin* (in Chinese) 26, 404-406 (2005).
- [120]. ML Jia, JH Zhang, SZ Lu, JT Sun, YS Luo, XG Ren, HW Song, and **XJ Wang**, "Optical Properties of Charge Transfer Bands for the S₆ Site in Y₂O₃:Eu³⁺ Nanoparticles " *Chin J Lumin* (in Chinese) 25, 62-66 (2004).
- [121]. L Chen, JH Zhang, YS Luo, SZ Lu, and **XJ Wang**, "Luminescent Properties of Colloidal ZnS:Mn²⁺ Nanoparticles:Surface Modification with Metallic Ions," *Chin J Lumin* (in Chinese) 25, 72-76 (2004).
- [122]. JT Sun, JH Zhang, SZ Lu, YS Luo, XG Ren, BJ Chen, and **XJ Wang**, "Infrared Spectra and Thermal Stability of Er³⁺ -doped Gadolinium Borosilicate Glasses and Glass Ceramics," *Chin J Lumin* (in Chinese) 25, 649 (2004).
- [123]. JT Sun, JH Zhang, BJ Chen, SZ Lu, XG Ren, and **XJ Wang**, "Preparation and Optical Properties of Er³⁺-Doped Gadolinium Borosilicate Glasses," *J Chin Rare Earth Soc* (in Chinese) 22, 832 (2004).
- [124]. D Jia, **XJ Wang**, WM Yen, "Delocalization, Thermal Ionization, and Energy Transfer in Singly Doped and Codoped CaAl₄O₇ and Y₂O₃," *Phys Rev B* 69, 235113-7 (2004)
- [125]. JH Zhang, ML Jia, S Lu, YS Luo, XG Ren, **XJ Wang**, "Study on UV Excitation Properties of Eu³⁺ at S₆ Site in Bulk and Nanocrystalline Cubic Y₂O₃," *J Rare Earths* 22, 45 (2004).
- [126]. HR Zheng, **XJ Wang**, MJ Dejneka, WM Yen, and RS Meltzer, "Up-Converted Emission in Pr³⁺ Doped Fluoride Nanocrystals-Based Oxyfluoride Glass Ceramics," *J Limin* 108, 395-399 (2004).
- [127]. K Dou, Z Xu, **XJ Wang**, A Apblett, and T Collins, "Up-Converted Emission of Colloidal Nanocrystals Containing Dendrimers," *J Limin* 108, 355-358 (2004).

- [128]. WY Deng, JH Zhang, JT Sun, YL Luo, JL Lin, **XJ Wang** and W Xu, "Analysis of Spectral Components in the 1.5 μm Emission Band of Er^{3+} doped Borosilicate Glass," *J Non-Cryst Solids* 336, 44-48 (2004)..
- [129]. L Chen, JH Zhang, YS Luo, SZ Lu, and **XJ Wang**, "Effect of Zn^{2+} and Mn^{2+} Introduction on the Luminescent Properties of Colloidal ZnS:Mn^{2+} Nanoparticles," *Appl Phys Lett* 84, 112-114 (2004)
- [130]. ML Jia, JH Zhang, SZ Lu, JT Sun, YS Luo, XG Ren, HW Song, and **XJ Wang**, "UV Excitation Properties of Eu^{3+} at the S_6 Site in Bulk and Nanocrystalline Cubic Y_2O_3 ," *Chem Phys Lett* 384, 193-196 (2004).
- [131]. HY Chen, SS Dong, YK Yang, DM Li, JH Zhang, **XJ Wang**, SH Kan and GT Zou, "A Twinned PbTe Film Induced by the 7×7 Reconstruction of $\text{Si}(1\ 1\ 1)$," *J Cryst Grow* 273, 156-160, (2004).
- [132]. D Jia, W Jia, **XJ Wang**, and WM Yen, "Quenching of Thermo-Stimulated Photo-Ionization by Energy Transfer in $\text{CaAl}_4\text{O}_7: \text{Tb}^{3+}, \text{Ce}^{3+}$," *Solid State Commun* 129, 1–4 (2004).
- [133]. DD Jia, **XJ Wang**, WY Jia, and W M Yen, "Persistent Energy Transfer in $\text{CaAl}_2\text{O}_4: \text{Tb}^{3+}, \text{Ce}^{3+}$," *J Appl Phys* 93, 148-152 (2003).
- [134]. **XJ Wang**, DD Jia, and W M Yen, " Mn^{2+} Activated Green, Yellow, and Red Long Persistent Phosphors," *J Limin* 102/103, 34-37 (2003).
- [135]. **XJ Wang**, HR Zheng, DD Jia, SH Huang, RS Meltzer, Matthew J Dejneka, and W M Yen, "Spectroscopy of different sites in Pr^{3+} -doped oxyfluoride glass ceramics," *Microelec. J* 34, 549-551 (2003).
- [136]. SH Huang, **XJ Wang**, BJ Chen, DD Jia, and W M Yen, "Photon Cascade Emission and Quantum Efficiency of the $^3\text{P}_0$ Level in Pr^{3+} Doped $\text{SrAl}_{12}\text{O}_{19}$ System," *J Limin* 102/103, 344-348 (2003).
- [137]. SZ Lu, BJ Chen, SH Huang, **XJ Wang**, LZ Lu, and W M Yen, "Thermal Excitation in $\text{SrAl}_{12}\text{O}_{19}:\text{Pr}^{3+}$," *Acta Phys Sin.* 52, 1009-1012 (2003).
- [138]. K Dou, ZS Xu, **XJ Wang**, YY Chen, WT Ford, and T Collins, "Spectral Study of Colloidal Photonic Crystals," *J Limin* 102/103, 376-380 (2003).
- [139]. NS Sokolov, OV Anisimov, AG Banshchikov, SV Gastev, C Dyroff, RJ Reeves, **XJ Wang**, W M Yen, "Exciton Luminescence in Orthorhombic-Structure MnF_2 Epitaxial Films," *Phys Solid State* 44, 1455-1458 (2002).
- [140]. QF Li, SH Huang, SZ Lu, SM Liu, **XJ Wang**, and WM Yen, "Selective Excitation in Pr^{3+} -doped LaF_3 Nanocrystals/Glass," *J Chin. Rare Earth Soc.* 20, 526-529 (2002).
- [141]. DD Jia, **XJ Wang**, and W M Yen, "Electron Traps in Tb^{3+} -doped CaAl_2O_4 ," *Chem Phys Lett* 363, 241-244 (2002).
- [142]. **XJ Wang**, SH Huang, AM Srivastava, AA Setlur, LZ Lu, and W M Yen, "Photon cascade emission through energy transfer in Pr^{3+} and Er^{3+} Co-doped System," *J Rare Earths* 20, 259-263 (2002).
- [143]. DD Jia, RS Meltzer, W M Yen, WY Jia, and **XJ Wang**, "Green Phosphorescence of $\text{CaAl}_2\text{O}_4:\text{Tb}^{3+}, \text{Ce}^{3+}$ Through Persistence Energy Transfer," *Appl Phys Lett* 80, 1535-1537 (2002).
- [144]. DD Jia, **XJ Wang**, E van der Kolk, and W M Yen, "Site Dependent Thermoluminescence of Long Persistent Phosphorescence of $\text{BaAl}_2\text{O}_4:\text{Ce}^{3+}$," *Opt Commun* 204, 245-249 (2002).
- [145]. SH Huang, BJ Chen, **XJ Wang**, and W M Yen, "Measurement of Quantum Efficiency Exploiting Photo Cascade Emission," *Chin J Limin* (in Chinese) 23, 223-227 (2002)
- [146]. **XJ Wang**, C Schmitt, and M Payne "Oscillations with Three Damping Effects," *Euro. J Phys* 23, 155-164 (2002).
- [147]. **XJ Wang**, SH Huang, LZ Lu, AM Srivastava, AA Setlur, and W M Yen, "Measurement of Quantum Efficiency in Pr^{3+} -doped CaAl_4O_7 and SrAl_4O_7 Crystals," *Appl Phys Lett* 79, 2160-2162 (2001)

- [148]. **XJ Wang**, SH Huang, RJ Reeves, W Wells, MJ Dejneka, RS Meltzer, and W M Yen, "Studies of the Spectroscopic Properties of Pr^{3+} Doped LaF_3 Nanocrystals/Glass," *J Limin* 94-95, 229-233 (2001).
- [149]. SH Huang, LZ Lu, WY Jia, **XJ Wang**, W M Yen, Alok M Srivastava, and Anant A Setlur, "The Spectral Properties of the 1S_0 State in $\text{SrAl}_{12}\text{O}_{19}$: Pr," *Chem Phys Lett* 348, 11-16 (2001).
- [150]. SH Huang, **XJ Wang**, RS Meltzer, AM Srivastava, AA Setlur, and W M Yen, "The Mixing of the $4f_2$ 1S_0 State with the $4f_5d$ States in Pr^{3+} doped $\text{SrAl}_{12}\text{O}_{19}$," *J Limin* 94-95, 119-122 (2001).
- [151]. **XJ Wang**, SH Huang, LZ Lu, W M Yen, AM Srivastava, and AA Setlur, "Energy Transfer in Pr^{3+} - and Er^{3+} -codoped $\text{CaAl}_{12}\text{O}_{19}$ Crystal," *Opt Commun* 195, 405-410 (2001).
- [152]. RJ Reeves, **XJ Wang**, W M Yen, OV Anisimov, AG Banskchikov, SV Gastev, and NS Sokolov, "Luminescence of Magnetic Excitons in Thin MnF_2 Films," *J Limin* 94-95, 207-210 (2001).
- [153]. WY Jia, YY Wang, FE Fernandez, **XJ Wang**, SH Huang, and W M Yen, "Photoluminescence of $\text{Ce}^{3+}, \text{Tb}^{3+}:\text{Y}_2\text{O}_3$ Nano-Cluster Embedded in SiO_2 Sol-Gel Glasses," *Mater. Sci Engine. C* 16, 55-58 (2001).
- [154]. MG Payne, L Deng, and **XJ Wang**, "High Efficiency Four-Wave Mixing at Low Power Densities and Low Concentrations—The Role of Coherence," *Resonance Ionization Spectroscopy* 584, 163-168 (2001, invited).
- [155]. **XJ Wang**, W M Dennis, and W M Yen, "Decay Processes of High-Frequency Nonequilibrium Phonons in Praseodymium-Doped Laser Crystals," *Chin. J Limin* 20, 134-142 (1999, invited)
- [156]. JW Meng, **XJ Wang**, HP Ma, XG Ren, XR Xu, and WM Ren, "Protoporphyrin IX fluorescence from the plasma of tumor-implanted mouse," *J Limin* 84/85, 251-254 (1999).
- [157]. JW Meng, **XJ Wang**, T Lin, XG Ren, HF Pang, and CN Zhou, "The study of protoporphyrin IX metabolism in cell proliferation using photoluminescence method," *J Limin* 84/85, 271-273 (1999).
- [158]. **XJ Wang**, TE Milner, JF de Boer, Y Zhang, DH Pashley, and JS Nelson, "Characterization of Dentin and Enamel Using Optical Coherence Tomography," *Appl Opt* 38, 2092-2096 (1999). Selected for republication in SPIE's Milestone Series.
- [159]. K Dou, XD Sun, **XJ Wang**, R Parkhill, Y Guo, and ET Knobbe, "Optical Limiting and Nonlinear Absorption of Excited states in Metalloporphyrin-Doped Sol Gels," *IEEE J Quan Electron* 35, 1004-1014 (1999).
- [160]. K Dou, XD Sun, **XJ Wang**, R Parkhill, Y Guo, and ET Knobbe, "Optical Limiting and Upconverted Luminescence in the Metalloporphyrin-Doped Sol Gels," *Solid State Commun* 107, 101-106 (1998).
- [161]. ZP Chen, TE Milner, **XJ Wang**, SS Srinivas, and JS Nelson, "Optical Doppler Tomography: Imaging in vivo Blood Flow Dynamics Following Pharmacological Intervention and Photodynamics Therapy," *Photochem Photobio* 66, 56-60 (1997)
- [162]. ZP Chen, TE Milner, SS Srinivas, **XJ Wang**, A Malekafzali, MJC van Gemert, and JS Nelson, "Noninvasive Imaging of in vivo Blood Flow Velocity Using Optical Doppler Tomography," *Opt Lett* 22, 1119-1121 (1997). Selected for republication in SPIE's Milestone Series
- [163]. **XJ Wang**, TE Milner, ZP Chen, and JS Nelson, "Measurement of Fluid-Flow-Velocity Profile in Turbid Media by the Use of Optical Doppler Tomography," *Appl Opt* 36, 144-149 (1997).
- [164]. XD Sun, **XJ Wang**, W Shan, JJ Song, and ET Knobbe, "Nonlinear Effects in Chromophore-Doped Sol-Gel Photonic Materials," *J Sol-Gel Sci Tech* 9, 169-181 (1997, invited paper).
- [165]. **XJ Wang**, TE Milner, M Chang, and JS Nelson, "Group Refractive Index Measurements of Dry and Hydrated Type I Collagen Films Using Optical Low-Coherence Reflectometry," *J Biomed Opt* 1, 212-216(1996).
- [166]. **XJ Wang**, TE Milner, and JS Nelson, "Characterization of Fluid Flow Velocity by Optical Doppler Tomography," *Opt Lett* 20, 1337-1339 (1995).

- [167]. **XJ Wang**, RP Dhond, TE Milner, JS Nelson, WV Sorin, and SA Newton, "Characterization of Human Scalp Hairs by Optical Low-Coherence Reflectometry," *Opt Lett* 20, 524-526 (1995). Selected for republication in SPIE's Milestone Series.
- [168]. **XJ Wang**, LM Yates, and ET Knobbe "Study of Nonlinear Absorption in Metalloporphyrin-Doped Sol-Gel Materials," *J Limin* 60/61, 469-473 (1994).
- [169]. LR Matthews, **XJ Wang**, and ET Knobbe, "Luminescence Behavior of Inorganic and Metalorganic Europium(III) Dopants Incorporated into Silica and Epoxide Ormosil Sol-Gel Hosts," *J Sol-Gel Sci Tech* 2, 627-634 (1994).
- [170]. LM Yates, **XJ Wang**, and ET Knobbe "Continuous and Time-Resolved Luminescence Spectroscopy of Sulfonatoporphyrin Dopants in Sol-Gel Hosts," *J Sol-Gel Sci Tech* 2, 745-749 (1994).
- [171]. LR Matthews, **XJ Wang**, and ET Knobbe, "Concentration Effects on the Luminescence Behavior of Europium(III) Chloride- and Organo-Europium-Doped Silicate Gels," *J Non-Cryst. Solids* 178, 44-51 (1994).
- [172]. D Arbuthnot, **XJ Wang**, and ET Knobbe, "Spectroscopic Study of 8-Hydroxyquinoline-5-sulfonic Acid-Doped Sol-Gel Transition Metal Ion Optode Materials," *J Non-Cryst. Solids* 178, 52-57 (1994).
- [173]. **XJ Wang** and W M Dennis, "Spectral and Temporal Dynamics of Nonequilibrium Phonons in YAG:Pr³⁺," *Persistent Spectral Hole-Burning: Science and Applications* 16, 193-195 (1991).
- [174]. **XJ Wang**, WM Dennis, and WM Yen, "Phonon Dynamics in YAG:Pr³⁺," (A study of phonon propagation in YAG:Pr³⁺ single crystal fiber) *J Limin* 53, 44-47 (1992).
- [175]. **XJ Wang**, WM Dennis, and WM Yen, "Dynamics of Acoustic Phonon Decay: Experiment and Simulation," in *Computer Simulation Studies in Condensed Matter Physics V*, pp 162-167, Ed. David P Landau, Kin-Keung Mon, and Heinz-Bernd Schüttler (Springer-Verlag, Germany, 1993).
- [176]. **XJ Wang**, WM Dennis, and WM Yen, "Anharmonic Interactions of the Nonequilibrium Phonons in YLiF₄," *Phys Rev B* 46, 8168-8172 (1992).
- [177]. **XJ Wang**, WM Dennis, and WM Yen, "Temperature Effects in Nonequilibrium Phonon Decay," *Phys Rev Lett* 67, 2807-2809 (1991).
- [178]. **XJ Wang**, J Ganem, WM Dennis, and WM Yen, "Decay Processes of Nonequilibrium Phonons in Pr³⁺-doped Yttrium Aluminum Garnet," *Phys Rev B* 44, 900-902 (1991).
- [179]. **XJ Wang** and XY Zhang, "Resonant and Antiresonant Raman Scattering from Ga_{1-x}Al_xAs," *Chin. Phys* (translated from *J Semiconductor* by American Institute of Physics) 10, 1054-1059 (1990).
- [180]. **XJ Wang** and XY Zhang, "Disorder Effects in Ga_{1-x}Al_xAs," *Solid State Commun* 59, 869-872(1986).

CONFERENCE PROCEEDINGS

- [181]. JH Zhang, RX Zhong, X Zhang, SL Lu, and **XJ Wang**, "Energy Transfer and Red Phosphorescence in Strontium Aluminates Doped with Cr³⁺, Eu²⁺ and Dy³⁺," PV 2005-XX (in press).
- [182]. ZY He, **XJ Wang**, and WM Yen, "Behavior of Mn²⁺ Ions in the Trapping Process of SrMg(SiO₃)₂:Mn,Dy," ECS Transactions (in press).
- [183]. **XJ Wang**, ZG Nie, JH Zhang, XG Ren, and GB Zhang, "Mechanisms of Energy Transfer in Pr³⁺ and Cr³⁺ Codoped SrAl₁₂O₁₉ Phosphor," ECS Trans. 2 (21), 15 (2007)
- [184]. **XJ Wang**, JY Zhang, TE Milner, and JS Nelson, "Application of Optical Coherence Method for Static Structural and Doppler Biomedical Imaging," in 7APPC, Ed. H Chen, 365-366 (Science Press, Beijing, 1999).
- [185]. **XJ Wang**, JY Zhang, TE Milner, JF de Boer, Y Zhang, DH Pashley, and JS Nelson, "Optical birefringence imaging of dentin and enamel," *Advances in Optical Imaging and Photon Migration*, TOPS 21, 335-337 (1998)

- [186]. K Dou, XD Sun, **XJ Wang**, and ET Knobbe, "Nonlinear Absorption and Emission of Excited States in Metalloporphyrin-Doped Sol Gels," Sol-Gel Optics IV, SPIE 3136, Edited by Bruce S Dunn, John D Mackenzie, EJ Pope, Helmut Schmidt, and Masayuki Yamane, 48-55 (1997).
- [187]. **XJ Wang**, TE Milner, and JS Nelson, "Application of Optical Coherence Interferometry to Measure Spatial Profile of Fluid Flow Velocity," Optical Techniques in Fluid, Thermal, and Combustion Flow, SPIE 2546, 341-346 (1995).
- [188]. LR Matthews, **XJ Wang**, and ET Knobbe, "Luminescence Behavior of Organo-Ruthenium Complexes Entrapped within Sol-Gel Hosts," New Materials for Advanced Solid State Lasers, MRS proceedings 329, 285-290 (1994).
- [189]. **XJ Wang**, LR Matthews, and ET Knobbe, "Energy Transfer and Emission Processes in Sol-Gel Materials Doped with Europium(III) Complex," Electrical, Optical and Magnetic Properties of Organic Solid State Materials, MRS proceedings 328, 745-750 (1994).
- [190]. D Arbuthnot, **XJ Wang**, and ET Knobbe, "Luminescence Effects in Gels Containing Organo-Aluminum Complexes," Better Ceramics through Chemistry VI 346, 569-578 (1994).
- [191]. **XJ Wang**, ET Knobbe, and LM Yates, and "Excited State Absorption and Radiative Up-Conversion in Porphyrin-Doped Gels," Sol-Gel Optics III, SPIE 2288, 264-270 (1994).
- [192]. **XJ Wang**, "In Memory of My Advisor William M. Yen," *Chin J Lumin.* (in Chinese) 29, 2008.
- [193]. DD Jia, JH Zhang, ZY He, and **XJ Wang**, "Professor William Yen's Laboratory and Long Persistence Phosphors," *Chin J Lumin.* (in Chinese) 29, 2008.

RECENTLY INVITED SPEECHES (CONFERENCES)

- "Studies of photo-stimulated emissions of rare earth doped C12A7 X-ray and optical storage phosphors," The 2nd International Workshop on Persistent and Photostimulable Phosphors (IWPPP 2013), Guangzhou, China, November 17-21, 2013.
- "EPR and Optical Spectroscopies of Rare Earth Doped $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3$," 18th International Conference on Dynamical Processes in Excited States of Solids (DPC'13), Fuzhou, Fujian, China, August 4-9, 2013.
- "Persistent Luminescence through Persistent Energy Transfer" 1st International workshop on Persistent Phosphors, Ghent, Belgium, September 19-21, 2011.
- "Surface Effects on the Trivalent Rare Earth Doped LuBO_3 and Lu_2O_3 Nano-phosphors," Nano-Material Luminescent Properties (NMLP '10), Xi-an, China, Aug. 10-14, 2010.
- "Optical properties and energy transfer in white LED phosphors," the 17th International Conference on Dynamical Processes in Excited States of Solids (DPC 10), Argonne, IL, June 20-25, 2010 (with JH Zhang).
- "Studies of Persistent Phosphors from Blue to Red," 25th Rare Earth Research Conference (RERC'08), Tuscaloosa, AL, June 22-26, 2008.
- "Persistent Energy Transfer and Persistent Phosphors," Optical Properties of Condensed Matter 08, Qingdao, China, July 24-27, 2008
- "Optical Properties and Energy Transfer in $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$ Nanoparticles," Nano-Material Luminescent Properties (NMLP '08), Zhuhai, China, Nov. 23-27, 2008.
- "On the Improvement of Red-Emitting Persistent Phosphors of $\text{BaMg}_2\text{Si}_2\text{O}_7: \text{Mn}^{2+}, \text{Eu}^{2+}, \text{Dy}^{3+}$ and $\text{CaTiO}_3:\text{Pr}^{3+}$," in 211th Meeting of the Electrochemical Society, Chicago, USA, May 6-10, 2007.
- "Recent Development in Rare Earth Doped Nanophosphors," 1st Conference on Optical Properties of Doped Nanomaterials, Haikou, Hainan, China, November 5-11, 2006.
- "Red Phosphorescence in Rare Earth Doped Oxide Materials," in the 209th Meeting of the Electrochemical Society, Denver, USA, May 7-12, 2006.
- "Dynamical Processes of Ln^{3+} Ions Doped in LaF_3 Nanocrystals Embedded in Transparent Oxyfluoride Glass" the 15th International Conference on Dynamical Processes in Excited States of Solids (DPC 05), Shanghai, China, Aug. 1~5, 2005.
- "Quantum Efficiency of Rare Earth Emission in Different Dynamical Processes," in The 3rd International Conference on Materials for Advanced Technologies (ICMAT 05) and the 9th International Conference on Advanced Materials (ICAM 2005), Singapore, July 3~8, 2005.

- ❑ "Efficiency Measurements of Fluorescence and Persistence Phosphorescence," the 14th International Conference on Luminescence (ICL' 05), Beijing, China, July 25~29, 2005.
- ❑ "Rare Earth Doped Phosphors Suitable for UV/Blue Excitation," in 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 16-20, 2005.
- ❑ "Rare Earth Doped Phosphors Suitable for UV/Blue Excitation," in 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 16-20, 2005.
- ❑ "General Factors Governing the Efficiency of Luminescent Devices, " in Optical Properties of Condensed Matters '04, Urumchi, China, August 9-16, 2004.
- ❑ "High Efficiency Four-Wave Mixing at Low Power Densities and Low Concentrations -- The Role of Coherence," The Tenth International Symposium on Resonance Ionization Spectroscopy and Its Applications, Knoxville, Tennessee October, 8-12, 2000.

RECENTLY INVITED SPEECHES (INSTITUTIONS)

- ❑ "Persistent Phosphors through Persistent Energy Transfer," College of Physics and Opto-Electronics Technology, Fujian Normal University, Fuzhou, China, August 8, 2013
- ❑ "Biomedical Applications of Optical Low Coherence Tomography," College of Science, Changchun University of Science and Technology, May 29, 2013.
- ❑ "Beyond Physics," School of Physics, Northeast Normal University, May 29, 2013.
- ❑ "Phosphors for LED and WLED," College of Electronic Engineering and Sciences, Jilin University, Changchun, China, March 12, 2010.
- ❑ "Biomedical Applications of Persistent Phosphors," Institute of Optoelectronic Technology, Beijing Jiaotong University, Beijing, China, March 19, 2010.
- ❑ "Phosphor Preparation Using Energy Transfer in Oxides," Department of Physics, Lanzhou University, Lanzhou, China, August 5, 2009.
- ❑ "Applications of Nanoscience and Nanotechnologies," Department of Geology & Physics, Lock Haven University of Pennsylvania, Lock Haven, PA, October 10, 2007.
- ❑ "Optical properties and Applications of Sol-Gel derived Chromophore," Shaanxi Normal University, College of Physics and Information Technology, Xi'an China, Nov. 21, 2005
- ❑ "Setup and Applications of OCT and ODC, " Department of Physics, Fudan University, August 19, 2004.
- ❑ "Rare Earth Doped Fiber Glass for Applications in Telecommunication" Institute of Optics, Fine Mechanics, and Physics, Chinese Academy of Sciences, Changchun, China, May 10, 2002.
- ❑ "Quantum Cutting and Quantum Efficiency Measurement," Rare Earth Functional Materials Symposium, Institute of Optics, Fine Mechanics, and Physics, Chinese Academy of Sciences, Changchun, China, August 20, 2001.
- ❑ "Biomedical Applications of Low coherence light," Department of Chemistry and Physics, Armstrong Atlantic State University, March 5, 2001.
- ❑ "Optical Properties of Chromophor-doped Sol-Gel Materials," Institute of Photographic Chemistry, Chinese Academy of Sciences, Beijing, China, August 22, 2000.
- ❑ "Nonlinear Optical Properties of Organic-doped Sol-Gel Materials and the Application in Optical Limiting and Chemical Sensors," Organic Optronics Material Symposium, Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, China, August 21, 2000 (invited).
- ❑ "Optical Coherence Tomography for Biomedical Application," Department of Physics, California State University, Long Beach, February 20, 1998.
- ❑ "Biomedical Optics Imaging," Department of Physics, California State University, Northridge, February 26, 1999.
- ❑ "Optical Low-Coherence Reflectometry—Techniques and Applications," Sigma Xi Society, Medical College of Georgia, Augusta, GA, March 20, 1997.
- ❑ "Low-Coherence Optical Imaging in Biomedicine", Institute of Molecular Medicine and Genetics, Medical College of Georgia, May 1, 1997.
- ❑ "Infrared Optical Doppler Tomography," Changchun Institute of Physics, Chinese Academy of Sciences, September 1, 1997.

- ❑ "Infrared Optical Doppler Tomography," Department of Physics, California State University, Long Beach, CA, July 19, 1996.

GSU AND PHYSICS DEPARTMENT

- ❑ "Introduction to Nanoscience and Nanotechnology," *Focus on Excellence*, GSU, Feb. 2, 2008.
- ❑ "Optics in Our Life," *Focus on Excellence*, GSU, April 16, 2003.
- ❑ "Physics is Fun: Learning Physics through the Internet," Department of Physics, GSU, Dec. 4, 2002.
- ❑ "Biomedical Applications of Optics," Society of Physics Students at GSU, November 20, 1996.
- ❑ "Laser and Optics in Biomedicine," Society of Physics Students at GSU, Spring, 1996

PAPERS PRESENTED RECENTLY AT MEETINGS

- ❑ "Comparison of Up-Converted Emissions in Yb³⁺,Er³⁺ co-doped Gd₂(WO₄)₃ and Gd₂WO₆ Phosphors," 18th International Conference on Dynamical Processes in Excited States of Solids (DPC'13), Fuzhou, Fujian, China, August 4-9, 2013.
- ❑ "C12A7, A Conductive Phosphor for the Applications of FEDs," 8th International Conference on f-Elements, Udine, Italy, August 26-31, 2012
- ❑ "Site, luminescence and energy transfer of Ca₃Sc₂Si₃O₁₂:Ce³⁺,Mn²⁺ for Phosphor Converted-white LEDs," the 16th International Conference on Luminescence, Ann Arbor, MI, USA, June 26~ July 1, 2011.
- ❑ "Luminescence Properties and Energy Transfer Processes in Doubly Doped YAG:Ce³⁺, Pr³⁺," 26th Rare Earth Research Conference (RERC11), Santa Fe, NM, USA, June 19-23, 2011.
- ❑ "Characteristic Emission in Glutaraldehyde Polymerized Hemoglobin," the 17th International Conference on Dynamical Processes in Excited States of Solids (DPC 10), Argonne, IL, June 20-25, 2010.
- ❑ "Long Lasting Yellow Phosphorescence in Sr₃SiO₅:Eu²⁺ and Sr₃SiO₅:Eu²⁺, Dy³⁺ phosphors," in the 214th Meeting of the Electrochemical Society, Honolulu, HI, Oct 14-18, 2008.
- ❑ "Direct Calculation of Transition Intensities in LiYF₄:Nd³⁺," in the XIII Feofilov Symposium on Spectroscopy of Crystals Doped by Rare Earth and Transition Metal Ions, Irkutsk, Russia, July 9~13, 2007.
- ❑ "Photoconductivity in Y₂O₃:Pr³⁺," in the XIII Feofilov Symposium on Spectroscopy of Crystals Doped by Rare Earth and Transition Metal Ions, Irkutsk, Russia, July 9~13, 2007.
- ❑ "A Study of Phosphorescence and Trapping Processes in SrMg(SiO₃)₂:Mn,Eu, Dy System," in the 209th Meeting of the Electrochemical Society, Denver, USA, May 7-12, 2006.
- ❑ "Visible Quantum Cutting through Downconversion in SrAl₁₂O₁₉: Pr³⁺, Cr³⁺ Upon Pr³⁺ 4f² - 4f5d Excitation," in the 209th Meeting of the Electrochemical Society, Denver, USA, May 7-12, 2006.
- ❑ "The energy transfer fromnanocrystalline ZnS to trivalent rare earth ions confined in water/AOT/isooctane microemulsions," the 14th International Conference on Luminescence, Beijing, China, July 25~29, 2005.
- ❑ "Studies of the Yellow and Red Persistent Phosphors of (Sr, Ca)Mg(SiO₃)₂:Mn²⁺,Dy³⁺ and Zn₂P₂O₇:Mn²⁺,Cu⁺," in 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 16-20, 2005.
- ❑ "Size Effects on Nano-phosphors," The Fifth International Conference on Low Dimensional Structures and Devices (LDSD'04), Playa Del Carmen, Mexico, Dec. 12~17, 2004.
- ❑ "Multicolor Long Persistent Phosphors," The 70th Annual Meeting of the Southeastern Section of the American Physical Society (SESAPS), November 6-8, Wilmington, NC
- ❑ "Thermal Effect on the Photoinization in Doubly Doped Rare Earth System," International Conference on Dynamical Processes in Excited States of Solids, Aug. 3-7, 2003, Christchurch, New Zealand.
- ❑ "Temperature Dependent Spectral Study of Excitons in GaN Epilayers," International Conference on Dynamical Processes in Excited States of Solids, Aug. 3-7, 2003, Christchurch, New Zealand.

- ❑ "Spectroscopy of Different Sites in Pr^{3+} -doped Oxyfluoride Glass Ceramics," The Fourth International Conference on Low Dimensional Structures and Devices, Dec. 8, 2002, Fortaleza-Ceará, Brazil.
- ❑ "Simultaneous Measurement of Thickness and Refractive Index Using Low-Coherence Light — an Experiment for Advanced Physics Lab," 7th Annual Fall Meeting, A Joint Meeting of the NCS-AAPT, SACS-AAPT, and SPS, Nov. 2, 2002, UNC Asheville.
- ❑ "Forced Oscillations with Nonlinear Friction," Chris Schmitt and XJ Wang (advisor), *ibid.*
- ❑ "Comparison of the Optical Properties of Trivalence Praseodymium Doped Lanthanum Fluoride Nanocrystals and Glass, " Southern Atlantic Coast Section, American Association of Physics Teachers - Spring 2002 Meeting, April 6, 2002, Gainesville, GA (with physics students Wesley Wells, Chris Schmitt, and Joseph Bell).
- ❑ "Resonance Behavior in Force Oscillation with Quadratic Damping," Chris Schmitt and XJ Wang (advisor), *ibid.*
- ❑ "Spectral Properties and Quantum Efficiency of Optical Emission in Pr^{3+} -Doped CaAl_4O_7 and SrAl_4O_7 Crystals," Centennial Meeting of the Electrochemical Society/International Society of Electrochemistry, May 14, 2002, Philadelphia, PA
- ❑ "Green Phosphorescence of CaAl_2O_4 : Tb^{3+} , Ce^{3+} through Persistence Energy Transfer," Annual American Physical Society Annual Meeting, March 18, 2002, Indianapolis, Indiana.
- ❑ "Photon Cascade Emission and Quantum Efficiency of the $^3\text{P}_0$ Level In Pr^{3+} Doped $\text{SrAl}_{12}\text{O}_{19}$ System," International Conference on Luminescence and Optical Spectroscopy of Condensed Matter (ICL'02), August 24~29, Budapest, Hungary.
- ❑ "Spectral Study of Colloidal Photonic Crystals," *ibid.*
- ❑ " Mn^{2+} Activated Green, Yellow, and Red Long Persistent Phosphors," *ibid.*
- ❑ "Effects of de-localization of 5d electrons of rare earths on luminescence of phosphors," The 8th International Conference on Electronic Materials (IUMRS-ICEM 2002), June 10, 2002. Xi'an, China.
- ❑ "Spectral properties and quantum efficiency of optical emission in Pr^{3+} -codoped CaAl_4O_7 and SrAl_4O_7 Crystals, " The 13th International Conference on Dynamical Processes in Excited States of Solids, July 1-4, 2001, Lyon, France (Presented with a physics student, Wesley Wells).
- ❑ "The mixing of the $4f^2 \ ^1\text{S}_0$ state with the $4f5d$ states in Pr^{3+} doped $\text{SrAl}_{12}\text{O}_{19}$," *ibid.*
- ❑ "Exciton Emission in Manganese Fluoride Thin Films," *ibid.*
- ❑ "Oscillations with Three Damping Effects," The 67th annual meeting of the southeastern section of APS, Starkville, MS, Nov. 2~4, 2000 (with a physics student, Chris Schmitt).
- ❑ "Fluorescence study of Evans Blue Dyed-Albumin on Lung Permeability," *ibid.* (with a physics student, Joe Bell).
- ❑ "Studies of the Spectroscopic Properties of Pr^{3+} Doped in LaF_3 Nanocrystals/Glass," *ibid.* (with a physics student, Wesley Wells).
- ❑ "The Study of tumor development using spectroscopic analysis," The 12th International Conference on Dynamical Processes of Excited States in Solids, Humacao, Puerto Rico, USA, May 23-27, 1999.
- ❑ "Protoporphyrin IX Metabolism in Cell Proliferation-A Photoluminescence Study, " The 12th International Conference on Dynamical Processes of Excited States in Solids, May 23-27, 1999, Humacao, Puerto Rico, USA
- ❑ "Nonlinear Absorption and Up-converted Emission of Excited States in Metalloporphyrin-Doped Sol Gels," Conference on Excited States in Condensed Matter '98," August 1-5, 1998, Changchun, China.
- ❑ "Decay Processes of High-frequency Nonequilibrium Phonons in Praseodymium-doped Laser Crystals," Conference on Excited States in Condensed Matter '98, August 1-5, 1998, Changchun, China.
- ❑ "Optical Birefringence Imaging of Dentin and Enamel," Optical Society of America Topical Meetings, March 9-13, 1998, Orlando, FL
- ❑ "Application of Optical Coherence Method for Static Structural and Doppler Biomedical Imaging," The 7th Asia Pacific Physics Conference, August 19-22, 1997, Beijing, China.

- "Optical Doppler Tomography as a non-invasive Diagnostic Monitor of *in-vivo* Blood Flow at Discrete Spatial Locations in Tissue during Photodynamic Therapy," SPIE annual BIOS meeting, Feb. 3-7, 1997, San Jose, CA
- "Noncontact, Noninvasive Measurements Of Optical Properties On Biological Samples Using Low-Coherence Light," Georgia Academy of Science, April 25-26, 1997, Carrolton, GA
- "Spectroscopic Studies of the Emissions from OPO/OPA," Georgia Academy of Science, Carrolton, GA, April 25-26, 1997 (Presented with a physics student, Johnny Beck).