

**Dr. Paul Schmidt**

**Department of Chemistry  
University of Saint Francis  
Fort Wayne, IN 46808**

---

**Work: (260)-399-7700x8220**

**Cell: (706)-247-5528**

**Email: pschmidt@sf.edu**

**Education:**

Ph. D. Physics; The University of Georgia; Athens, GA; August 2006;  
Dissertation Title: "A Study of Photon Cascade Emission", Advisor: Uwe Happek

B.S. Physics; Loyola College; Baltimore, MD; May 1998

**Scholarship of Teaching:**

**Post Graduate Teaching Experience:**

2011-2013 Tenure track, full-time, Assistant Professor,  
University of Saint Francis, Fort Wayne, IN

Courses Taught: Introductory Physics I, algebra based  
Introductory Physics I labs  
Earth and Space Science  
Introductory Physics II, algebra based  
Introductory Physics II labs  
Physical Survey  
Physical Survey Labs  
Introductory Astronomy

2010-2011 Contract, full-time, Assistant Professor,  
Ball State University, Muncie IN

Courses Taught: Introductory Physics I, non-calculus based  
Introductory Physics I lab  
Physical Optics (graduate and undergraduate)  
Problem Solving for Introductory Physics  
Introductory Astronomy

2009-2010 Visiting, full time, Assistant Professor,  
Indian University-Purdue University Fort Wayne, Fort Wayne, IN

Courses Taught: Intermediate Electricity and Magnetism  
Physics of Sports  
Light and Color  
General Physics I, non-calculus based  
General Physics I lab

2008-2009 Visiting, full time, Assistant Professor,  
Earlham College, Richmond IN

Courses Taught: Introductory Physics I, non-calculus based  
Introductory Physics I lab  
Introductory Physics II, non-calculus based  
Introductory Physics II lab  
Advanced Physics Laboratory  
Electronics and Instrumentation  
Physics of Green Energy

2007-2008 Contract, full-time, Assistant Professor,  
Ball State University, Muncie IN

Courses Taught: Introductory Physics I, non-calculus based  
Introductory Physics I lab  
Introductory Physics I, calculus based (summer)  
Problem Solving for Introductory Physics  
Introductory Astronomy

2006-2007 Visiting, full-time, Assistant Professor,  
Franklin and Marshall College, Lancaster PA

Courses Taught: Introductory Physics I, II, calculus based  
Introductory Physics Labs I, II  
Electricity and Magnetism

### Graduate Teaching Experience:

2004-2005 Trained graduate students to teach Advanced Optics Lab  
2002-2004 Advanced Optics Lab Instructor, designed and taught lab  
2000-2002 Introductory Astronomy Lab Instructor  
1998-2005 Introductory Physics Lab Instructor

### Scholarship of Application:

#### Professional Affiliations:

1998-2006 & 2012-present American Physical Society  
2001-2006 Electrochemical Society  
2012-present Indiana Renewable Energy Association  
2012-present American Association of Physics Teachers

Service to the University:

*Presentations*

Feb 2012 “Build a Better Light Bulb”, University of Saint Francis. Achatz Research Exhibition. Plenary Speaker

*Committees*

2013 - Faculty Senator representing SOAS, vice chair of senate  
 2013 - Planning and Budget, faculty rep  
 2013 - Council on Shared Governance, faculty rep  
 2013 - Green Campus Committee, co-chair  
 Spring 2013 Lilly Grant task force member, \$1 million grant to support career services and develop programs to connect to local industry and employment. Grant was successful.  
 2012 - Information Services Committee, SOAS faculty rep

*Other*

May 2013 Appalachian Field Studies course  
 Sept 2011 Luger Energy Conference, attended with student

Service to the community:

Nov 2013 Eagle Tech Academy, science expert for student presentations  
 Oct 2013 Three Rivers Science Symposium, SEM of fibers and hair samples  
 Spring 2013 Pre-session poster review coordinator; prepare poster presenters for the Annual Achatz Hall Poster Party. Event was cancelled.  
 Oct 2012 Three Rivers Science Symposium, Organizer for Ocean Chemistry Portion and designed and presented module on Heating and Temperature effects  
 Dec 2011 Text book reviewer, 2 chapters for algebra based Introductory Physics text: Freedman, Ruskell, Kesten, and Tauck’s College Physics, first edition  
 Oct 2011 Three Rivers Science Symposium, ancient measurement techniques

Service prior to USF:

2010-2011 Undergraduate Committee, Ball State University, Physics and Astronomy Department  
 2010-2011 Graduate Committee, Ball State University, Physics and Astronomy Department  
 2010-2011 Curriculum and Assessment Committee, Ball State University, Physics and Astronomy Department  
 2009 Science Olympiad Event Coordinator  
 2008-2009 Co-leader of Green Sciences Applied Group at Earlham College  
 2008-2009 Society of Physics Students faculty advisor  
 2008 Rebuilding Together volunteer  
 2008 Judge, East Central Indiana Regional Science Fair  
 2007-2008 Undergraduate Committee, Ball State University, Physics and

	Astronomy Department
2004&2005	Special Awards Judge, Georgia Science and Engineering Fair
2000-2005	Graduate Student Awards Committee, UGA Physics and Astronomy Department
2001-2004	Graduate students representative for Physics and Astronomy Department faculty meetings
2000-2004	Physics and Astronomy representative for University of Georgia Graduate and Professional Students Council
2003-2004	President, Physics and Astronomy Graduate Students
1999-2000	President, Physics and Astronomy Graduate Students
1999	Habitat for Humanity volunteer

### **Scholarship of Discovery:**

#### Research Fields of Interest:

- Spectroscopic and material characterization of rare-earth and transition metal doped phosphors towards the goal of higher efficiency lighting and other luminescence
- Sustainable energy applications and public awareness of conservation, including wind electric, solar electric, solar hot water and other conservation applications

#### Research Experience:

- 2012-2013 Mentoring professor for 3 undergraduates performing energy audits on smaller scale USF campus structures  
Students involved: Joe Chambers, Sydnee Hamrick, Brooke Weaver  
A summary of energy needs based on minor repairs and the original baseline performance will be calculated and compared against actual energy costs. The project will result in a detailed report for university personnel and in student presentations at the Butler Undergraduate Research Conference in spring of 2013
- 2009-2010 Summer mentoring professor for 3 undergraduates on two projects culminating in student presentations at Butler Undergraduate Research Conference spring 2010
- Fabrication and evaluation of Zinc Oxide nanobelts, Alvaro Puente, Jorge Villaram
  - Use of Blower door tests to facilitate energy audits, Gabe Torres
- 2006-2010 Collaborative author on several research publications stemming from

data collected while a graduate student (see refereed article list)

1999-2006 Graduate research Assistant, University of Georgia, Athens, GA  
Dr. Uwe Happek supervisor (Candidate phosphor materials,  
characterization, and modeling) (see refereed article list)

1997-1998 Undergraduate research Assistant, Loyola College, Baltimore, MD  
Dr. Joseph Ganem supervisor (IR laser materials, fabrication and  
characterization) (see refereed article list)

### Refereed Articles:

The influence of the  $\text{Pr}^{3+} 4f^1 5d^1$  configuration on the  $^1\text{S}_0$  emission efficiency and lifetime in  $\text{LaPO}_4$ ; A.M. Srivastava, A.A. Setlur, H.A. Comanzo, W.W. Beers, U.Happek, P. Schmidt; Optical Materials; 33 (2011), p292-298

Luminescence of  $\text{Pr}^{3+}$  Doped  $\text{LuCl}_3$  and  $\text{LuBr}_3$  Under Interconfigurational ( $4f^2 \rightarrow 4f^1 5d^1$ ) and Band Gap Excitation; A. M. Srivastava, J. S. Vartuli, S. J. Duclos, P. A. Schmidt, S. B. Chaney, U. Happek; IEEE Transactions on Nuclear Science; June 2009 Part 2 of 3, Vol. 56 Issue 3, p986-988

Luminescence from the  $\text{Pr}^{3+} 4f^1 5d^1$  and  $^1\text{S}_0$  States in  $\text{LiLaP}_4\text{O}_{12}$ ; A. M. Srivastava, A. A. Setlur, H. A. Comanzo, M. Hannah, P. Schmidt, U. Happek; Journal of Luminescence, Feb 2009, Vol. 129 Issue2, p126-129

Luminescence of  $\text{LuCl}_3:\text{Pr}^{3+}$  under interconfigurational ( $4f^2 \rightarrow 4f^1 5d^1$ ) and band gap excitations; A. M. Srivastava, U. Happek, P. Schmidt; Optical Materials; Oct 2008, Vol. 31 Issue 2, p213-217

Luminescence of  $\text{LuCl}_3$  doped with  $\text{Pr}^{3+}$ ; A. M. Srivastava, S. J. Duclos, H. A. Comanzo, S. M. Loureiro, J. S. Vartuli, P. A. Schmidt, U. Happek; IEEE Transactions on Nuclear Science; June 2008, Vol. 55 Issue 3, p1225-1227

First Observation of Quantum Splitting Behavior in Nanocrystalline  $\text{SrAl}_{12}\text{O}_{19}:\text{Pr}$ , Mg Phosphor; S.M. Loureiro, A. A. Setlur, W. Heward, S.T. Taylor, H. A. Comanzo, M. Manoharan, A. Srivastava, P. Schmidt, U. Happek; Chem. Mater.; (Article); 2005

Nature of Luminescent Centers in Cerium-activated Materials with the  $\text{CaFe}_2\text{O}_4$  structure; V. Manivannan, H.A. Comanzo, A.A. Setlur, A.M. Srivastava, P.A. Schmidt, U. Happek; Journal of Luminescence; 102-103 (2003) 635-637

Thulium cross-relaxation in a low phonon energy crystalline host; J Ganem, J. Crawford, P. Schmidt, N.W. Jenkins, S.R. Bowman; Physical Review B 66 (24): Art. No. 245101 DEC 15 2002

## Abstracts and Talks at Professional Meetings:

On the luminescence of  $\text{LuCl}_3:\text{Pr}^{3+}$  under  $4f^2 \rightarrow 4f^1 5d^1$  and band gap excitation; A. M. Srivastava, U. Happek, P. Schmidt; Electrochemical Society, 2007 meeting 10/2007, Washington, D.C.

On the Luminescence of  $\text{Pr}^{3+}$  in  $\text{LiLaP}_4\text{O}_{12}$ ; P. Schmidt, A. M. Srivastava, A. Setlur, H. Comanzo, U. Happek, J. Hughes and M. Hannah; Electrochemical Society, 2006 meeting 11/2006, Cancun, Mexico

Mechanism for persistent luminescence in  $\text{Sr}_2\text{MgSi}_2\text{O}_7:\text{Eu}^{2+}, \text{Dy}^{3+}$ ; M. Hannah, U. Happek, P. Schmidt, A.A. Setlur, A.M. Srivastava, H.A. Comanzo; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

$4f5d, ^1S_0$  level assignment from anomalous optical properties of  $\text{LaPO}_4:\text{Pr}^{3+}$  at low temperatures; P. Schmidt, U. Happek, H.A. Comanzo, A.A. Setlur, A.M. Srivastava, W.W. Beers; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

Characterization of nano-sized  $\text{LaPO}_4:\text{Pr}^{3+}$ ; P. Schmidt, U. Happek, H.A. Comanzo, A.A. Setlur, A.M. Srivastava, W.W. Beers, R. Garaas, S.M. Loureiro; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

On the Synthesis and Luminescence of red LED phosphors based upon garnet hosts; A.A. Setlur, W.J. Heward, A.M. Srivastava, H.A. Comanzo, G. Chandran, M.V. Shankar, U. Happek, P. Schmidt; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

A new green phosphor for UV-LED's  $\text{Na}_2\text{Gd}_2\text{B}_2\text{O}_7:\text{Ce}^{3+}, \text{Tb}^{3+}$ ; A.M. Srivastava, H.A. Comanzo, A.A. Setlur, U. Happek, P. Schmidt; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

Experimental elucidation of the mechanism for persistent luminescence in  $\text{SrAl}_2\text{O}_4:\text{Eu}^{2+}$  and  $\text{SrAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Dy}^{3+}$ ; A.A. Setlur, A.M. Srivastava, H.A. Comanzo, U. Happek, P. Schmidt; Electrochemical Society, 2005 meeting 11/2005, Los Angeles, CA

First Observation of Quantum Splitting Behavior in Nanocrystalline  $\text{SrAl}_{12}\text{O}_{19}:\text{Pr}, \text{Mg}$  Phosphor; S.M. Loureiro, A. Setlur, W. Heward, S.T. Taylor, H. Comanzo, M. Manoharan, A. Srivastava, P. Schmidt, U. Happek; University of Georgia NanoSEC conference, 5/26/2005, Athens, GA

Anomalous optical properties of  $\text{LaPO}_4:\text{Pr}^{3+}$  at low temperatures; P. Schmidt, U. Happek, H.A. Comanzo, A.A. Setlur, A.M. Srivastava, W.W. Beers; Electrochemical Society, 2004 Joint International meeting 10/3/2004, Honolulu, HI

Nature of the  $\text{Eu}^{2+}$  emission in the UV LED phosphor  $\text{Sr}_2\text{SiO}_4: \text{Eu}^{2+}$ ; H.A. Comanzo, A.A. Setlur, A.M. Srivastava, P. Schmidt, B. Wen, U. Happek; Electrochemical Society, 2004 Joint International meeting 10/3/2004, Honolulu, HI

Optical properties of the Quantum Cascade nanocrystalline phosphor  $\text{SrAl}_{12}\text{O}_{19}:\text{Pr}^{3+}$ ; H.A. Comanzo, A.A. Setlur, A.M. Srivastava, P. Schmidt, S.P. Compton, U. Happek, W.W. Beers; Electrochemical Society, 2004 Joint International meeting 10/3/ 2004, Honolulu, HI

Applied research on high efficiency white light LED's; P. Schmidt, B. Wen, H.A. Comanzo, A.A. Setlur, A.M. Srivastava, U. Happek; University of Georgia Engineering Conference; 8/28/2004, Athens, GA

The Luminescence of  $\text{Bi}^{3+}$  in the Garnet Structure; A. Setlur, A. Srivastava, U. Happek, and P. Schmidt; 203<sup>rd</sup> meeting of the Electrochemical Society, 2003 4/28/2003, Paris, France

Concentration Studies of the Praseodymium  $^3\text{P}_0$  Emission in  $\text{SrAl}_{12}\text{O}_{19}:\text{Pr}^{3+}$ ; U. Happek, P. Schmidt, A. Setlur, H. Comanzo, V. Manivannan, and A. Srivastava; 203<sup>rd</sup> meeting of the Electrochemical Society, 2003 4/28/2003, Paris, France

Luminescence of a Photon Cascade Nanophosphor; A. Setlur, A. Srivastava, V. Manivannan, H. Comanzo, U. Happek, J. Fleniken, P. Schmidt, and B. Tissue; 203<sup>rd</sup> meeting of the Electrochemical Society, 2003 4/29/2003, Paris, France

Ce Luminescence in  $\text{SrY}_2\text{O}_4$ ; P. A. Schmidt, U. Happek, V. Manivannan, H. A. Comanzo, A. A. Setlur, A. M. Srivastava; South Eastern Section of APS meeting, 11/2/2002

Thulium Cross-Relaxation in a Low-Phonon Energy Crystalline Host; J. Ganem, J. Crawford, P. Schmidt, N. W. Jenkins, S. R. Bowman; American Physical Society, 2002 March meeting 3/18/2002

Spectroscopy of Erbium doped Yttrium and Potassium Lead Chlorides; J. Ganem, P. Schmidt, S. R. Bowman, S Searles; Optical Society of America, 1998 meeting 10/7/1998

## **Awards and Honors:**

-University of Saint Francis Green Campus Committee, Sustainability Challenge faculty/staff winning proposal 2012: Using Energy Audits on USF campus

structures to evaluate efficiency while involving students in a research experience.

- The University of Georgia Department of Physics and Astronomy, William E Cummings Award for Excellence, 2006 (highest departmental award)
- University of Georgia Outstanding Graduate Teaching Award, 2002
- Inducted to Sigma Pi Sigma, the Society of Physics Students honor society, 1998