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George S. Nolas, Ph.D.

Distinguished University Professor

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Professional Appointments

- 2015- present **Distinguished University Professor**, University of South Florida
2009-2015 **Professor**, Department of Physics, University of South Florida
2005-2009 **Associate Professor**, Department of Physics, University of South Florida
2001-2005 **Assistant Professor**, Department of Physics, University of South Florida
1998-2001 **Adjunct Professor**, Department of Physics and Astronomy, Clemson University
1998-2001 **Senior Member of the Technical Staff**, Marlow Industries, Inc., Dallas, Texas
1996-1998 **Member of the Technical Staff**, Marlow Industries, Inc., Dallas, Texas
1994-1996 **Postdoctoral Research Associate**, Department of Physics, Rensselaer Polytechnic Institute (Advisor: Glen A. Slack)
1987-1988 **Instructor** of Electronics & Computer Sci., SCS Tech Institute, New York, NY (New York State teaching license)

Education

- Ph.D. Physics, 1994, Stevens Institute of Technology (Advisor: Swapan Gayen)
(Thesis: Electronic Raman Scattering Study of Trivalent Cerium in Yttrium Oxide and Related Complexes.)
M.S. Physics, 1986, New York University (Advisor: H. Henry Stokes)
(Thesis: Oscillations in Glow Discharges)
B.A. Physics, 1984, Queens College of the City University of New York

Honors and Awards

- 2016 Outstanding Faculty Award
2014 Barbara P. & Emery H. Jewell Award for Physics Faculty Excellence
2013 Fellow, American Physical Society
2013 USF Alliance for the Advancement of Florida's Academic Women in Chemistry and Engineering, for outstanding service and exceptional commitment
2013 USF Outstanding Faculty Award
2012 Fellow, American Association for the Advancement of Science
2007 Jerome Krivanek Distinguished Teacher Award
2007 USF Doctoral Student and Faculty Mentor Publication Award (2 awards received)
2005 University of South Florida Outstanding Undergraduate Teaching Award
2002 University of South Florida Presidential Young Faculty Award
1998 Promoted to Senior Member of the Technical Staff, Marlow Industries, Inc.
1994 Graduate Research Award, Stevens Institute of Technology
1988 Robert Crooks Stanley Graduate Fellowship, Stevens Institute of Technology
1986 James Arthur Scholarship, New York University
1986 New York University Scholarship, New York University
1981 Mayor's Scholarship, Queens College of CUNY

Grant Awards: Multiple federally funded grant awards each year for the past 13 years.

Publications: Seven U.S. patents and one pending; two books including the foremost text in the field of thermoelectrics; 12 review articles; 8 edited volumes; over 200 peer reviewed publications

Invited Presentations: 86 Plenary & Invited presentations at Conferences, Seminars and Colloquia

Professional Affiliations

American Associated for the Advancement of Science (AAAS), **Fellow**
American Ceramics Society (ACerS)
American Physical Society (APS), **Fellow**
European Materials Research Society (E-MRS)
International Thermoelectrics Society (ITS) [elected board member 2000-2002 & 2005-2007]
Materials Research Society (MRS)
National Academy of Inventors, Charter Member and USF Chapter Secretary, elected
National Society of Hispanic Physicists
SIGMA XI

Patents (seven issued, one pending)

- 1) A. Tamboli, E. Toberer, P. Taylor, L. Mark, C. Koh, B. David, S. Sonny and **G.S. Nolas**, “Hydrogen Storage in Non-hydrate Clathrates”, Patent Pending, filed November 1, 2011.
- 2) **G.S. Nolas**, “Bulk Dimensional Nanocomposites for Thermoelectrics Applications”, US Patent 8,759,662, June 24, 2014.
- 3) M. Beekman and **G.S. Nolas**, “Novel Methods for Solid State Crystal Growth”, US Patent 8,414,858, April 9, 2013.
- 4) **G.S. Nolas**, S. Witanachchi and P. Mukherjee, “Method of Manufacturing a Clathrate Compounds”, US Patent 8,211,400, July 3, 2012.
- 5) **G.S. Nolas**, S. Witanachchi and P. Mukherjee, “Clathrate Compounds for Electronic Applications”, US Patent 7,534,414, May 19, 2009.
- 6) **G.S. Nolas**, “Semiconductor Materials with Partially Filled Skutterudite Crystal Lattice Structures optimized for Selected Thermoelectric Properties and Methods of Preparation”, US Patent 6,369,314, April 9, 2002.
- 7) **G.S. Nolas**, “Semiconductor Materials with Skutterudite Type Crystal Lattice Structures Optimized for Selected Thermoelectric Properties and Methods of Preparation”, US Patent 6,207,888, March 27, 2001.
- 8) **G.S. Nolas** and G.A. Slack, “Thermoelectric Materials Fabricated from Clathrate Compounds and other Materials which form an Inclusion Complex and Method for Optimizing Selected Thermoelectric Properties”, US Patent 6,188,011, February 13, 2001.

Teaching and Mentoring

Awards:

1. **Distinguished University Professor** (2015)
2. **Barbara P. & Emery H. Jewell Award for Physics Faculty Excellence** (2014)
3. **Alliance for the Advancement of Florida's Academic Women in Chemistry and Engineering (AAFAWCE), honor in recognition of outstanding service and exceptional commitment** (2013)
4. **Jerome Krivanek Distinguished Teacher Award** (2007)
5. **USF Doctoral Student and Faculty Mentor Publication Award** (2 awards received, 2007)
5. **University of South Florida Outstanding Undergraduate Teaching Award** (2005)

Course Development:

Developed two new courses, and one currently being developed, for the USF Physics Curriculum

1. **Materials Physics (PHZ 4324)**
2. **Mathematical Methods in Physics (PHY 3113)**
3. **Materials for the 21st Century (for the USF Education Abroad Program)**

Courses Taught at USF:

Undergraduate: Calculus Based General Physics; Electricity & Magnetism I & II (with course that included a three-hour weekly laboratory); Mathematical Methods in Physics; Materials Physics
Graduate: Applied Materials Physics; Advances in Pure and Applied Physics

Awards and achievements by my students (international, national, conference & university awards):

- **Adjunct Professor, spring 2016, teaching General Physics II**
Kaya Wei
- **Invited presentation to II-VI Incorporated Headquarters and R&D center, Saxonburg PA, 2015**
Kaya Wei
- **Undergraduate Research Award, 2015**
Brian Eckert
- **2013-2014 University of South Florida Outstanding PhD Dissertation Award**
Stevce Stefanoski
- **Invited presentation at the 5th GCOE International Symposium on Weaving Science beyond Particle-Matter Hierarchy, Sendai, Japan, 2013**
Kaya Wei
- **Awarded a Carnegie Fellowship, Carnegie Institute of Washington, Washington, DC, 2013**
Stevce Stefanoski
- **Graduate Student Research Scholarship, 2011**
Deutscher Akademischer Austausch Dienst (DAAD - German Academic Exchange Service)
Stevce Stefanoski
- **2009-2010 University of South Florida Outstanding PhD Dissertation Award**
Matthew Beekman
- **National Research Council Fellow, NIST, Gaithersburg, MD, 2009**
Joshua Martin

Awards and achievements by my students, continued

- **Margaret C. Etter Student Lecturer Award, Powder Diffraction Special Interest Group, 2009** American Crystallographic Association Annual Meeting, Toronto, CA
Matthew Beekman
- **Materials Research Society Symposium Student Oral Presentation Award, 2009**
“Preparation and Fundamental Properties of Clathrate-II Intermetallic Phases”
M. Beekman and G.S. Nolas, Spring 2009 MRS conference, San Francisco, CA.
- **Goldsmid Award for Excellence in Research in Thermoelectrics, 2008**
Matthew Beekman
- **Summer Internship, General Motors R&D and Planning, 2008**
Matthew Beekman
- **Graduate Student Research Scholarship, 2008**
Deutscher Akademischer Austausch Dienst (DAAD - German Academic Exchange Service)
Matthew Beekman
- **University of South Florida Graduate Multidisciplinary Scholar, 2007-2009**
Steve Stefanoski
- **Materials Research Society Symposium Student Oral Presentation Award, 2007**
“Synthesis and Characterization of Inorganic Clathrate-II Materials”
M. Beekman and G.S. Nolas, presented at the Fall 2007 MRS conference, Boston, MA.
- **University of South Florida College of Arts and Sciences Publication Awards for Doctoral Students and Faculty Mentors (two awards with two of my students), 2007**
Joshua Martin and Matthew Beekman
- **Division of Inorganic Chemistry Student Travel Award, 234th American Chemical Society National Meeting, 2007**
“Synthesis and characterization of a new Na-Ge zeolite-like framework phase, $\text{Na}_{1-x}\text{Ge}_{3+z}$ ”, M. Beekman, G.S. Nolas, J.A. Kaduk, Q. Huang, W. Wong-Ng, & Z. Yang
- **University of South Florida Aboly Foundation Physics Undergraduate Scholarship**
Hillary Kirby (2008), Sarah Erickson (2005 and 2004), Matthew Beekman (2002)
- **University of South Florida Outstanding M.S. Thesis Award, 2006/2007**
Mathew Beekman
- **University of South Florida Fred L. and Helen M. Tharp Graduate Scholarship**
Joshua Martin (2006), Matthew Beekman (2005), Randolph Ertenberg (2003)
- **Summer Internship, General Motors R&D and Planning, 2005**
Joshua Martin
- **Best Student Paper Award, Electronics Division of the American Ceramics Society, 204th Meeting of the Electrochemical Society**
“Transport and optical properties of the type II clathrates $\text{Cs}_8\text{Na}_{16}\text{Si}_{136}$ and Si_{136} ”
M. Beekman, G.S. Nolas, J. Gryko, G.A. Lamberton, Jr., T.M. Tritt, and C.A. Kendziora; Proceedings of the 204th Meeting of the Electrochemical Society (2004).
- **Student Poster Award, Symposium S, Materials Research Society Fall Meeting, Boston, 2003** “ $\text{CoGe}_{1.5}\text{Se}_{1.5}$: Synthesis and Characterization”, R. Ertenberg, M. Beekman, J. Martin, G. Fowler, and G.S. Nolas, *Mat. Res. Soc. Sym. Proc.* **793**, 239 (2004).

Current positions held by students that graduated from my laboratory

Dr. Stevce Stefanoski, Ph.D. 2012: **Postdoctoral Associate and Carnegie Fellow, Carnegie Inst. for Science, Washington DC**

Dr. Matthew Beekman, Ph.D. 2009: **Tenure-track Assistant Professor, California State Polytechnic University, Pomona, CA**

Dr. Joshua Martin, Ph.D. 2008: **Measurements Division, National Institute of Standards and Technology, Gaithersburg, Maryland (NRC Postdoctoral Fellowship, NIST, 2008-2009)**

Mr. Michael Blosser, M.S. 2013: **Link-Systems International, Tampa, Florida**

Mr. Grant Fowler, M.S. 2006: **Flight Specialist, NASA, Houston, Texas**

Ms. Holly Rubin, M.S. 2006: **Materials Physicist, Oerlikon Inc., St. Petersburg, Florida**

Mr. Randolph Ertenberg, M.S. 2003 (deceased)

Positions held by Postdoctoral Associates from my laboratory

Dr. Zhenhua Ge (2013 – 2014): **Associate Professor, Kunming University of Science and Technology, Kunming, China**

Dr. Anuja Datta (2009 – 2011): **Research Associate and Clare Hall Fellow, Department of Materials Science & Metallurgy, University of Cambridge, Cambridge, UK**

Dr. Xiunu Lin (2007 – 2008): **Tenure-track Assistant Professor, Department of Physics at Easter Kentucky University, Richmond, Kentucky**

Dr. Dongli Wang (2006 – 2007): **Materials Scientist at Semiconductor Manufacturing International Corporation, Shanghai, China**

Thesis and Dissertation Committees (at USF unless otherwise indicated)

- 1) Mr. Dean Hobbis – Mentor, Ph.D. Applied Physics, planned for 2020
- 2) Ms. Kaya Wei – Mentor, Ph.D. Applied Physics, planned for 2015 (M.S. Physics 2014)
- 3) Mr. Michael Blosser – Mentor, M.S. Applied Physics, 2013
- 4) Mr. Stevce Stefanoski – Mentor, Ph.D. Applied Physics, 2012 (M.S. Physics 2010)
- 5) Mr. Mathew Beekman – Mentor, Ph.D. Applied Physics, 2009 (M.S. Physics 2006)
- 6) Mr. Joshua Martin – Mentor, Ph.D. Applied Physics, 2008 (M.S. Physics 2005)
- 7) Ms. Holly Rubin – Mentor, M.S. Physics, 2006
- 8) Mr. Grant Fowler – Mentor, M.S. Physics, 2006
- 9) Mr. Randolph Ertenberg – Mentor, M.S. Physics, 2003
- 10) Mr. Artem Khabibullin – Ph.D. Applied Physics, planned for 2018
- 11) Ms. Zohreh Nemati Porhokouh – Ph.D. Applied Physics, planned for 2018
- 12) Mr. Mohsen Ziaee – Ph.D. Mechanical Engineering, planned for 2019
- 13) Ms. Nemati Porshokouh Zohreh – Ph.D. Applied Physics, planned for 2017
- 14) Mr. Mahesh Hordagoda – Ph.D. Applied Physics, planned for 2017
- 15) Mr. Troy Stedman – Ph.D. Applied Physics planned for 2017 (M.S. Physics, 2014)
- 16) Mr. Marek R. Merlak – Ph.D. Applied Physics, planned for 2017
- 17) Mr. Jose Carballo Boschetti – Ph.D. Mechanical Engineering, 2015
- 18) Mr. Evan Lafalce – Ph.D. Physics, 2014
- 19) Mr. Ted Wangensteen – Ph.D. Applied Physics, 2012
- 20) Mr. Gokmen Demirkaya – Ph.D. Chemical Engineering, 2012
- 21) Mr. James Gass – Ph.D. Applied Physics, 2012
- 22) Mr. Robert Hyde – Ph.D. Applied Physics, 2011
- 23) Mr. Devajyoti Mukherjee – Ph.D. Applied Physics, 2011
- 24) Ms. Mariana Potcoava – Ph.D. Applied Physics, 2009
- 25) Mr. Patrick Waters – Ph.D. Mechanical Engineering, 2008
- 26) Mr. Benji Grayson – Ph.D. Chemical Engineering, 2007
- 27) Ms. Lindsay Hussey – M.S. Physics, 2007
- 28) Mr. Chris Mann – Ph.D. Applied Physics, 2006
- 29) Ms. Hoang Nguyen – M.S. Physics, 2006
- 30) Ms. Natalie Frey – M.S. Physics, 2004
- 31) Mr. Robert Hyde – M.S. Physics, 2004 (dual M.S. in Physics & Engineering)
- 32) Mr. Mark Lefevre – M.S. Physics, 2004
- 33) Mr. Houssam A. Mourad – Ph.D. Applied Physics, 2004
- 34) Ms. Jessica Wilson – M.S. Physics, 2004
- 35) Mr. Renko Hajndl – M.S. Physics, 2002
- 36) Mr. Michael Kaeser – M.S. Physics, 2000 (Clemson Univ., Dept. of Physics & Astronomy)

Service on International and National Committees, Boards and Panels

2012- present National Academy of Inventors elected board member, Secretary 2014 - 2016
2012 Direct Submission Editor, Proceedings of the National Academy of Sciences
2008-2009 Guest Editor, Journal of Electronic Materials
2008 NSF Panel to evaluate MRSEC \$15M-\$25M grant proposals
2005-07 & 2000-02 International Thermoelectric Society Board of Directors, elected
2003 NSF Panel to evaluate NSF MRI grant proposals

Symposia and Conference Organization

2017 Conference co-Chair, European Materials Research Society
2016 Session Chair, Materials Challenges in Alternative and Renewable Energy conference
2015 International Conference on Exotic Forms of Silicon, Member of the Organizing Committee
2015 International Thermoelectrics Conference, Germany, International Advisory Board member
2014 International Forum on New Materials, Italy, International Advisory Board member and session chair
2013 Synthesis and Function of Thermoelectric Materials conference, Switzerland, International Scientific Committee member
2013 International Thermoelectrics Conference, Japan, International Advisory Board member
2012, 10, 09, 05, 03, 01 & 00 Materials Research Society (MRS) Symposium Organizer
2012 International Symposium on Ceramic Materials and Components for Energy and Environmental Applications, Germany, Symposium Organizer
2012 International Advisory Committee and session chair, European Materials Research Society Symposium, France
2012, 10, 09, 07, 05, 03, 01, 2000 (Spring & Fall), 1997 & 1998 MRS session chair
2010 Third International Conference on Ceramics, Japan, Symposium Organizer
2010 Materials Solution for Sustainable Energy, Italy, International Advisory Board Member
2009, 08, 06, 05, 04, 02, 01, 00, 1999 & 1998 International Thermoelectrics Conf. session chair
2008 International Conference on Advanced Ceramics & Composites Organizer
2008 & 2006 Materials Science and Technology Session Organizer
2005 Treasurer, International Thermoelectrics Conference
2004 & 2001 American Physical Society (APS) Forum on Industrial and Applied Physics (FIAP) Focus Session Organizer
2004, 2003, 2002 & 2001 APS session chair
2003 & 2002 APS FIAP and Division of Materials Physics (DMP) Focus Session Organizer
2003 Electrochemical Society (ECS) Symposium Organizer and session chair
2002 Member of the Advisory Committee; Thermoelectrics Workshop, Traverse City, Michigan

University and College Service, USF

1. CAS Core Facilities Committee, 2013 – 2014
2. USF Faculty Senate, elected, 2009 – 2012
3. Building Planning and Construction Committee (the only non-administrative faculty member on the committee) for the Interdisciplinary Science Building, USF, 2006 – 2011.
4. USF College of Arts and Sciences Mentoring Program to junior faculty, 2006 - 2013
5. USF College of Arts and Sciences Advisory Committee, elected, 2009 – 2010
6. USF College of Arts and Sciences Tenure and Promotion Committee, 2006 – 2007
7. Review of Research & Development proposals, USF wide, 2003 – 2007

Service on Departmental Committees, USF

Physics Graduate Admissions Committee, 2010 – present
Physics Department Safety Council, 2005 – present
Physics Materials Diagnostic Facility Advisory Committee, 2004 – present
Chair, Department of Physics Faculty Advisory Committee (elected), 2007 – 8 & 2011 – 12
Department of Physics Faculty Advisory Committee (elected), 2005 – 8 & 2009 – 12
Department Interdisciplinary Sciences Building Liaison, 2006 – 2011
Chair, Department of Physics Undergraduate Committee (elected), 2007 – 2010
Department of Physics Undergraduate Committee, 2003 – 2010
Chair, Assistant Professor Search Committee, 2010 – 2011
Assistant Professor Search Committee, 2004 – 2013 (13 searches in total)
Associate Professor Search Committee, 2005 – 2006 & 2012 – 2013
Department of Physics Colloquium Committee, 2004 – 2005
Department of Physics Library Liaison, 2002 – 2004

Interviews in the public media.

1. Webs Edge, interview presenting overview of Materials Physics research for the USF Physics Department, February 10, 2014.
2. Interviewed on the WUSF radio station program University Beats by Mark Shreiner that aired January 13-19, 2002. The interview focused on my materials research, achievements and future technological goals. The interview can be heard by logging onto the WUSF website.
3. Interviewed and quoted for a New York Times article for the November 27th, 2001 issue in the technology section. My expertise in the field of thermoelectrics was required for this article.
4. Interviewed and quoted for Technology Research News, December 19, 2001, regarding the current state of thermoelectrics technology and future prospects.

Other Research Related Activities

1. Chosen by the US National Institute of Standards and Technology (NIST) in 2008 as one of a dozen laboratories world-wide in a round-robin study to develop a NIST Standard Reference Material for standardization of thermopower measurements.
2. Laboratory and research, including an overview of the novel materials under investigation, was reported in the Research Overview section of the *University of South Florida Office of Research 2001-2002 Annual Report*.
3. An overview of my research appeared in USF Magazine, Vol. 44, no. 1, p. 20 (2002).
4. In Who's Who in America: Science and Engineering, 5th edition, Marquis Who's Who, New Providence, NJ, 2001.
5. L. Qiu, I.P. Swainson, **G.S. Nolas**, M.A. White and C.I. Ratcliff, 'Thermal and Dynamic Properties of Semiconductor Clathrates by Powder Neutron Diffraction'; Canadian Institute for Neutron Scattering research proposal accepted and work accomplished at the National Research Council of Canada, Chalk River facility, 2001
6. A.P. Wilkinson, C. Lind, R.A. Young, S.D. Shastri, P.L. Lee, Y. Zhang and **G.S. Nolas**, 'New semiconductors may help you stay cool or power your automobile electronics', in *Advanced Photon Source Forefront, Synchrotron Radiation Instrumentation Sector*, annual publication, 2001, pp. 9-11.
7. **G.S. Nolas**, 'Partially filled skutterudites for better thermoelectrics' in High-tech Materials Alert, July, 2000, John Wiley, Inc.

Publications

Books

- *The Physics and Chemistry of Inorganic Clathrates*, Ed. **G.S. Nolas**, Springer, 2014
- *Thermoelectrics: Basics Principles and New Materials Developments*
G.S. Nolas, J.W. Sharp and H.J. Goldsmid, Springer, Heidelberg, 2001.
[completed a third printing]

Book Chapters and Review Articles (12)

- M. Beekman, D.T. Morelli, and G.S. Nolas, 'Better thermoelectrics through glass-like crystals', *Nature Materials* 14, 1182 (2015).
- M.L. Ramalingam, J. Fleurial, W.D. Jackson and G.S. Nolas, 'Direct Energy Conversion' in *Energy Conversion*, F. Kreith and Y. Goswami, eds. CRC Press, 2016.
- A. Datta and **G.S. Nolas**, 'Nanostructuring and Porosity in Anisotropic Thermoelectric Materials Prepared by Bottom-Up Processing' in *Thermoelectric Nanomaterials*, edited by T. Mori, Springer Series in Materials Science, Springer-Verlag, Berlin, 2013.
- A. Datta, A. Popescu, L. Woods, and **G.S. Nolas**, 'The Bottom-Up Approach To Bulk Thermoelectric Materials with Nano-Scale Domains', Ch. 14, *CRC Handbook: Thermoelectrics and its Energy Harvesting*, edited by D.M. Rowe, CRC Press, Boca Raton, 2012.
- **G.S. Nolas**, J. Poon and M. Kanatzidis, 'Recent Developments in Bulk Thermoelectric Materials', *Materials Research Society Bulletin* 31, 199 (2006).
- **G.S. Nolas**, 'Structure, transport and thermoelectric properties of clathrate compounds', in *Thermoelectrics Handbook: Macro to Nano-Structured Materials*, edited by D.M. Rowe, CRC Press, Boca Raton, FL, 2005, p. 33-1.
- **G.S. Nolas** and H.J. Goldsmid, 'Thermal Conductivity of Semiconductors', in *Thermal Conductivity-2003: Theory, Properties and Applications*, edited by T.M. Tritt, Kluwar Press, 2004, p. 105.
- **G.S. Nolas**, J. Yang and H.J. Goldsmid, 'Bulk Thermoelectric Materials', in *Thermal Conductivity-2003: Theory, Properties and Applications*, edited by T.M. Tritt, Kluwar Press, 2004, p. 123.
- **G.S. Nolas**, 'Clathrate Thermoelectrics', in *Chemistry, Physics and Materials Science of Thermoelectric Materials, Beyond Bismuth Telluride*, edited by M.G. Kanatzidis, S.D. Mahanti and T.P. Hogan, Kluwer Academic/Plenum Press, 2003, p. 107
- **G.S. Nolas**, 'Skutterudites: Promising materials for thermoelectric application', in *Recent Research Developments in Physics*, Vol. 2, ed: S.G. Pandalai, Transworld Research, 2001, p 239.
- **G.S. Nolas**, G.A. Slack and S.B. Schujman, 'Semiconductor Clathrates: A Phonon-Glass Electron-Crystal Material with Potential for Thermoelectric Applications', in *Semiconductors and Semimetals*, Vol. 69, ed. T.M. Tritt, Academic Press, 2001, p 255.
- **G.S. Nolas**, D.T. Morelli and T.M. Tritt, 'Skutterudites: A phonon-glass-electron-crystal approach to advanced thermoelectric energy conversion applications', *Annu. Rev. Mat. Res.* 29, 89 (1999).

Edited Volumes (8)

- Special issue on Thermoelectric Materials in *Scripta Materialia*, T. Mori and **G.S. Nolas**, special issue editors, 2015.
- Proceedings of the 2012 Materials Research Society **Volume 1490**, *Thermoelectric Materials Research and Device Development for Power Conversion and Refrigeration*, Editors: **G.S. Nolas**, Y. Grin, D. Johnson and A. Thompson.
- Proceedings of the 2009 Materials Research Society **Volume 1166**, *Materials and Devices for Thermal-to-Electrical Energy Conversion*, Editors: J. Yang, **G.S. Nolas**, K. Koumoto and Y. Grin.
- *Journal of Electronics Materials*, **Volume 38**, No. 7, 2009, Guest Editors: J. Yang, H. Linke, H. Bottner, M. Subramanian, **G.S. Nolas** and D.C. Johnson.
- Proceedings of the 2005 Materials Research Society **Volume 886**, *Materials and Technologies for Direct Thermal-to-Electrical Energy Conversion*, Editors: J. Yang, T. Hogan, R. Funahashi and **G.S. Nolas**.
- Proceedings of the 2003 Materials Research Society **Volume 793**, *Thermoelectric Materials 2003 – Research and Applications*, Editors: **G.S. Nolas**, J. Yang, T. Hogan and D.C. Johnson.
- Proceedings of the 2001 Materials Research Society **Volume 691**, *Thermoelectric Materials 2001 – Research and Applications*, Editors: **G.S. Nolas**, D.C. Johnson and D. Mandrus.
- Proceedings of the 2000 Materials Research Society **Volume 626**, *New Materials for Small Scale Thermoelectric Refrigeration and Power Generation Applications*, Editors: T.M. Tritt, **G.S. Nolas**, M. Kanatzidis, G. Mahan and D. Mandrus.

133. K. Wei, T. Stedman, Z. Ge, L. M. Woods and **G. S. Nolas**, 'A synthetic approach for enhanced thermoelectric properties of PEDOT:PSS bulk composites', *Appl. Phys. Lett.* **107**, 153301 (2015).
132. T. Stedman, K. Wei, **G. S. Nolas** and L. M. Woods, 'Thermoelectricity in polymer composites due to fluctuation-induced tunneling', *Phys. Chem. Chem. Phys.* **17**, 27883 (2015).
131. Y. Dong and **G. S. Nolas**, 'Crystal Growth through Field-Assisted Electrochemical Redox and Ion-Exchange Reactions: A Case Study of $K_{4.2}Na_{3.8}Si_{46}$ Clathrate-I', *Cryst. Growth Des.* **15**, 4731 (2015).
130. Y. Dong, A. R. Khabibullin, K. Wei, J. R. Salvador, **G. S. Nolas** and L. M. Woods, 'Bourbonite $PbCuSbS_3$: Stereochemically Active Lone-Pair Electrons that Induce Low Thermal Conductivity', *ChemPhysChem*, **16**, 3264 (2015).
129. K. Wei, L. Beauchemin, H. Wang, W. D. Porter, J. Martin, and **G. S. Nolas**, 'Enhanced thermoelectric properties of $Cu_2ZnSnSe_4$ with Ga-doping', *J. Alloys and Comp.*, **650**, 844 (2015).
128. Y. Dong, P. Chai, M. Beekman, X. Zeng, T.M. Tritt and **G. S. Nolas**, 'Precursor Routes to Complex Ternary Intermetallics: Single-Crystal and Microcrystalline Preparation of Clathrate-I $Na_8Al_8Si_{38}$ from $NaSi + NaAlSi$ ', *Inorg. Chem.* **54**, 5316 (2015).
127. K. Wei, J. Martin, J. R. Salvador, and **G. S. Nolas**, 'Synthesis and Characterization of Bourbonite $PbCuSbS_3$ Nanocrystals', *Cryst. Growth Des.* **15**, 3762 (2015).
126. Y. Dong, L. Wojtas, J. Martin, and **G. S. Nolas**, 'Synthesis, Crystal Structure, and Transport Properties of Quaternary tetrahedral Chalcogenides', *J. Mater. Chem. C* **3**, 10436 (2015).
125. K. Wei and **G. S. Nolas**, 'Synthesis and Characterization of Nanostructured Stannite $Cu_2ZnSnSe_4$ and $Ag_2ZnSnSe_4$ for Thermoelectric Applications', *ACS Appl. Mater. Interfaces* **7**, 9752 (2015).
124. Y. Dong, B. Eckert, H. Wang, X. Zeng, T.M. Tritt and **G. S. Nolas**, 'Synthesis, Crystal Structure, and Transport Properties of $Cu_{2.2}Zn_{0.8}SnSe_{4-x}Te_x$ ($0 \leq x \leq 0.4$)', *Dalton Trans.* **44**, 9014 (2015).
123. K. Wei and **G. S. Nolas**, 'Synthesis, characterization and alloying of Cu_2ZnSnQ_4 (Q=S, Se and Te) nanocrystals', *J. Solid State Chem.* **226**, 215 (2015).
122. L. Krishna, P. Chai, C. A. Koh, E. S. Toberer, and **G. S. Nolas**, 'Synthesis and structural properties of type I potassium SiGe alloy clathrates', *Mater. Lett.* **149**, 123 (2015).
121. Y. Dong and **G. S. Nolas**, 'Rapid Crystal Growth of Type-II Clathrates $A_8Na_{16}Si_{136}$ (A = K, Rb, Cs) by Spark Plasma Sintering', *Cryst. Eng. Comm.* **17**, 2242 (2015).
120. Z. Ge, K. Wei, H. Lewis, J. Martin, and **G. S. Nolas**, 'Bottom-up processing and low temperature transport properties of polycrystalline SnSe', *J. Solid State Chem.* **225**, 354 (2015).
119. A. Biswas, S. Chandra, S. Stefanoski, J. S. Blazquez, J. J. Ipus, A. Conde, M. H. Phan, V. Franco, **G. S. Nolas**, and H. Srikanth, 'Enhanced cryogenic magnetocaloric effect in $Eu_8Ga_{16}Ge_{30}$ clathrate nanocrystals', *J. Appl. Phys.* **117**, 033903 (2015).
118. Y. Dong, P. Puneet, T.M. Tritt, **G.S. Nolas**, 'High Temperature Thermoelectric Properties of p-type Skutterudites $Ba_{0.15}Yb_xCo_3FeSb_{12}$ and $Yb_yCo_3FeSb_9As_3$ ', *J. Mater. Sci.* **50**, 34 (2015).
117. K. Wei, Y. Dong, P. Puneet, T. M. Tritt, and **G. S. Nolas**, 'Synthesis, crystal structure, and transport properties of Fe substituted rhombohedral skutterudite derivatives $Co_{4-x}Fe_xGe_6Se_6$ ', *J. of Alloys and Comp.* **614**, 330 (2014).
116. Y. Dong, A. R. Khabibullin, K. Wei, Z. Ge, J. Martin, J. R. Salvador, L. M. Woods and **G. S. Nolas**, 'Synthesis, transport properties, and electronic structure of $Cu_2CdSnTe_4$ ', *Appl. Phys. Lett.* **104**, 252107 (2014).
115. Z. Ge, J. R. Salvador, and **G. S. Nolas**, 'Selective Synthesis of Cu_2SnSe_3 and Cu_2SnSe_4 Nanocrystals', *Inorg. Chem. Inorg. Chem.* **53**, 4445 (2014).
114. K. Wei, J. Martin, and **G. S. Nolas**, 'Synthesis, SPS processing and low temperature transport properties of polycrystalline $FeSb_2$ with nano-scale grains', *Mater. Lett.* **122**, 289 (2014).
113. Z. Ge and **G.S. Nolas**, 'Controllable Synthesis of Bismuth Chalcogenide Core-shell Nanorods', *Cryst. Growth Des.* **14**, 533 (2014).
112. Y. Dong, H. Wang, and **G. S. Nolas**, 'Synthesis and thermoelectric properties of Cu excess $Cu_2ZnSnSe_4$ ', *Phys. Status Solidi RRL* **8**, 61 (2014).

111. Y. Dong, P. Puneet, T. M. Tritt, and **G. S. Nolas**, 'Crystal structure and high temperature transport properties of Yb-filled p-type skutterudites $\text{Yb}_x\text{Co}_{2.5}\text{Fe}_{1.5}\text{Sb}_{12}$ ', *J. Solid State Chem.* **209**, 1 (2014).
- 110 Y. Dong, H. Wang, and **G. S. Nolas**, 'Synthesis, Crystal Structure, and High Temperature Transport Properties of p-Type $\text{Cu}_2\text{Zn}_{1-x}\text{Fe}_x\text{SnSe}_4$ ', *Inorg. Chem.* **52**, 14364 (2013).
- 109 Z. Ge, K. Wei, and **G. S. Nolas**, 'Synthesis and low-temperature transport properties of polycrystalline NiSe_2 ', *Phys. Status Solidi A* **210**, 2725 (2013).
- 108 A. D. Ritchie, M. B. Johnson, J. F. Niven, M. Beekman, **G. S. Nolas**, J. Gryko, and M. A. White, 'Influence of guest loading on thermal properties of $\text{Na}_x\text{Si}_{136}$ clathrates', *J. Phys. Cond. Matter* **25**, 435401 (2013).
- 107 S. Stefanoski, Y. Dong, and **G. S. Nolas**, 'Structural characterization and low-temperature physical properties of p-type single-crystal $\text{K}_8\text{Ga}_{8.5}\text{Sn}_{37.5}$ grown by self-flux method', *J. Solid State Chem.* **204**, 166 (2013).
- 106 Y. Dong, P. Puneet, T. M. Tritt, and **G. S. Nolas**, 'High-temperature thermoelectric properties of p-type skutterudites $\text{Yb}_x\text{Co}_3\text{FeSb}_{12}$ ', *Phys. Status Solidi RRL* **7**, 418 (2013).
- 105 Y. Dong, K. Wei, and **G. S. Nolas**, 'Transport properties of partially filled skutterudite derivatives $\text{Ce}_{0.13}\text{Co}_4\text{Ge}_6\text{Se}_6$ and $\text{Yb}_{0.14}\text{Co}_4\text{Ge}_6\text{Se}_6$ ', *Phys. Rev. B.* **87**, 195203 (2013).
- 104 M. C. Blosser and **G.S. Nolas**, 'Synthesis of $\text{Na}_8\text{Si}_{46}$ and $\text{Na}_{24}\text{Si}_{136}$ by oxidation of Na_4Si_4 from ionic liquid decomposition', *Mater. Lett.* **99**, 161 (2013).
- 103 S. Stefanoski, M.C. Blosser, and **G.S. Nolas**, 'Pressure Effects on the Size of Type-I and Type-II Si-Clathrates Synthesized by Spark Plasma Sintering', *Cryst. Growth Des.* **13**, 195 (2013).
- 102 A.N. Mansour, J. Martin, W. Wong-Ng, and **G.S. Nolas**, 'Electronic and atomic structure of $\text{Ba}_8\text{Ga}_{16}\text{Ge}_{30-x}\text{Si}_x$ type I clathrates: Ge and Ga XAFS study', *J. Phys.: Condens. Mater.* **24**, 485503 (2012).
- 101 Y. Dong, P. Puneet, T.M. Tritt, J. Martin, and **G.S. Nolas**, 'High temperature thermoelectric properties of p-type skutterudites $\text{Ba}_x\text{Yb}_y\text{Co}_{4-z}\text{Sb}_{12}$ ', *J. Appl. Phys.* **112**, 083718 (2012).
- 100 S. Stefanoski, C.D. Malliakas, M.G. Kanatzidis, and **G.S. Nolas**, 'Synthesis and structural characterization of $\text{Na}_x\text{Si}_{136}$ ($0 < x \leq 24$) single crystals and low-temperature transport of polycrystalline specimens', *Inorg. Chem.* **51**, 8686 (2012).
- 99 A. Popescu, L.M. Woods, and **G.S. Nolas**, 'Magnetic field and nanostructuring effects on the thermoelectric performance of bismuth', *Phys. Rev. B.* **85**, 115202 (2012).
- 98 A. Datta and **G.S. Nolas**, 'Solution-Based Synthesis & Low-Temperature Transport properties of CsBi_4Te_6 ', *Applied Materials & Interfaces.* **4**, 772 (2012).
- 97 A. Datta, and **G.S. Nolas**, 'Synthesis and Characterization of Nanocrystalline FeSb_2 for Thermoelectric Applications', *Eur. J. Inorg. Chem.* **55** (2012).
- 96 A. Chaturvedi, S. Stefanoski, M-H. Phan, **G.S. Nolas**, and H. Srikanth, 'Table-like magnetocaloric effect and enhanced refrigerant capacity in $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}\text{-EuO}$ composite materials', *Applied Physics Letters* **99**, 162513 (2011).
- 95 S. Stefanoski and **G. S. Nolas**, 'Synthesis and Structural Characterization of Single-Crystal $\text{K}_{7.5}\text{Si}_{46}$ and $\text{K}_{17.8}\text{Si}_{136}$ Clathrates', *Crystal Growth & Design* **11**, 4533 (2011).
94. A. Popescu, A. Datta, **G. S. Nolas**, and L. M. Woods, 'Thermoelectric properties of Bi-doped PbTe composites', *Journal of Applied Physics* **109**, 103709 (2011).
- 93 M-H. Phan, V. Franco, A. Chaturvedi, S. Stefanoski, **G. S. Nolas**, and H. Srikanth, 'Origin of the magnetic anomaly and tunneling effect of europium on the ferromagnetic ordering in $\text{Eu}_{8-x}\text{Sr}_x\text{Ga}_{16}\text{Ge}_{30}$ ($x = 0,4$) type-I clathrates', *Physical Review B* **84**, 054436 (2011).
- 92 S. Stefanoski, M. Beekman, W. Wong-Ng, P. Zavalij, and **G. S. Nolas**, 'Simple approach for selective crystal growth of intermetallic clathrates', *Chem. Mater.* **23**, 1491 (2011).
- 91 A. Datta and **G. S. Nolas**, 'Composition controlled synthesis of Bi rich $\text{Bi}_{1-x}\text{Sb}_x$ alloy nanocrystals by a low temperature polyol process', *Cryst. Eng. Comm.* **13**, 2753 (2011).
- 90 S. Stefanoski, J. Martin and **G.S. Nolas**, 'Low temperature transport properties and heat capacity of single-crystal $\text{Na}_8\text{Si}_{46}$ ', *J. Phys.: Condens. Mater* **22**, 485404 (2010).

- 89 A. Datta, J. Paul, A. Kar, A. Patra, Z. Sun, L. Chen, J. Martin and **G.S. Nolas**, 'Facile chemical synthesis of nanocrystalline thermoelectric alloys based on Bi-Sb-Te-Se', *Crystal Growth and Design* **10**, 3983 (2010).
- 88 A.D. Ritchie, M.A. MacDonald, P. Zhang, M.A. White, M. Beekman, J. Gryko and **G.S. Nolas**, 'X-ray absorption spectroscopy studies of local structure and electronic properties of $\text{Na}_x\text{Si}_{136}$ ($0 < x < 24$) clathrates', *Phys. Rev. B* **82**, 155207 (2010).
- 87 M.Beekman, R.P. Hermann, A. Mochel, F. Juranyi and **G.S. Nolas**, 'Low-energy Na phonon modes in silicon clathrate-II', *J. Phys.: Cond. Matter* **22**, 355401 (2010).
- 86 M. Beekman, E.N. Nenghabi, K. Biswas, C.W. Myles, M. Baitinger, Y. Grin and **G.S. Nolas**, 'Framework contraction in Na-stuffed $\text{Si}(cF136)$ ', *Inorg. Chem.* **49**, 5338 (2010).
- 85 M. Beekman, S. Stefanoski, W. Wong-Ng, J.A. Kaduk, Q. Huang, C. Reeg, C.R. Bowers and **G.S. Nolas**, 'Structure and thermal conductivity of $\text{Na}_{1-x}\text{Ge}_{3+z}$ ', *J. Solid State Chem.* **183**, 1272 (2010).
- 84 M.H. Phan, V. Franco, A. Chaturvedi, S. Stefanoski, H. Kirby, **G.S. Nolas** and H. Srikanth, 'Magnetocaloric effect and refrigerant capacity in Sr-doped $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ type-I clathrates', *J. Appl. Phys.* **107**, 09A910 (2010).
- 83 M. Beekman, J. Salvador, X. Shi, **G.S. Nolas**, and J. Yang, 'Characterization of Delafossite-type CuCoO_2 Prepared by Ion Exchange', *J. Alloy Comp.* **489**, 336 (2010).
- 82 M. Beekman, W. Schnelle, H. Borrmann, M. Baitinger, Yu. Grin and **G.S. Nolas**, 'Intrinsic electrical and thermal properties from single crystals of $\text{Na}_{24}\text{Si}_{136}$ ', *Phys. Rev. Letter* **104**, 018301 (2010).
- 81 M. Beekman, M. Baitinger, H. Borrmann, W. Schnelle, K. Meier, **G.S. Nolas**, Y. Grin, 'Preparation and crystal growth of $\text{Na}_{24}\text{Si}_{136}$: An electrochemical solid state route', *J. Amer. Chem. Soc.* **131**, 9642 (2009).
- 80 A. Popescu, L.M. Woods, J. Martin, and **G.S. Nolas**, 'A model of transport properties of thermoelectric nanocomposite materials', *Phys. Rev. B* **79**, 205302 (2009).
- 79 Z. Q. J. Lu, N. D. Lowhorn, W. Wong-Ng, W. Zhang, E. Thomas, M. Otani, M. Green, T. N. Tran, C. Caylor, N. Dilley, A. Downey, B. Edwards, N. Elsner, S. Ghamaty, T. Hogan, Q. Jie, Q. Li, J. Martin, **G.S. Nolas**, H. Obara, J. Sharp, R. Venkatasubramanian, R. Willigan, J. Yang, and T. Tritt, 'Statistical analysis of a round-robin measurement survey of two candidate materials for a Seebeck coefficient Standard Reference Material', *NIST Journal of Research* **114**, 37 (2009).
- 78 M. R. Dirmyer, J. Martin, **G. S. Nolas**, A. Sen, J. V. Badding, 'Thermal and Electrical Conductivity of Size-Tuned Bismuth Telluride Nanoparticles', *Small* **5**, 933 (2009).
- 77 J. Martin, L. Wang, L. Chen, and **G.S. Nolas**, 'Enhanced Seebeck coefficient through energy barrier scattering in PbTe nanocomposites', *Phys. Rev. B* **79**, 115311 (2009).
- 76 M. Beekman, J.A. Kaduk, J. Gryko, W. Wong-Ng, A. Shapiro and **G.S. Nolas**, 'Synthesis and characterization of framework-substituted $\text{Cs}_8\text{Na}_{16}\text{Cu}_5\text{Ge}_{131}$ ', *J. Alloy Comp.* **470**, 365 (2009).
- 75 A.N. Mansour, M. Beekman, W. Wong-Ng, and **G.S. Nolas**, 'Local structure of Cu in $\text{Cs}_8\text{Na}_{16}\text{Cu}_5\text{Ge}_{131}$ type II clathrate', *J. Solid State Chem, J. Solid State Chem.* **182**, 107 (2009).
- 74 N.D. Lowhorn, W. Wong-Ng, W. Zhang, Z.Q. Lu, M. Otani, E. Thomas, M. Green, T. N. Tran, N. Dilley, N. Elsner, T. Hogan, Q. Li, H. Obara, J. Sharp, R. Venkatasubramanian, R. Willigan, J. Yang, **G.S. Nolas**, T. Tritt, 'Round-robin measurements of two candidate materials for a Seebeck coefficient Standard Reference Material', *Applied Physics A, Applied Physics A* **94**, 231 (2009).
- 73 M.H. Phan, G.T. Woods, A. Chaturvedi, S. Stefanoski, G.S. **Nolas** and H. Srikanth, 'Long-range ferromagnetism and giant magnetocaloric effect in type VIII $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ clathrates', *Appl. Phys. Lett.* **93**, 252505 (2008).
- 72 K. Biswas, C.W. Myles, M. Sanati and **G. S. Nolas**, 'Thermal properties of guest-free Si_{136} and Ge_{136} clathrates: A first-principles study', *J. Appl. Phys.* **104**, 033535 (2008).
- 71 J. Martin, H. Wang and **G.S. Nolas**, 'Optimization of the thermoelectric properties of $\text{Ba}_8\text{Ga}_{16}\text{Ge}_{30}$ ', *Appl. Phys. Lett.* **92**, 222110 (2008).
- 70 M. Beekman and **G.S. Nolas**, 'Inorganic clathrate-II materials of group 14: synthesis routes and physical properties', *J. Mater. Chem.* **18**, 842 (2008).

- 69 T. Mori, J. Martin and **G.S. Nolas**, ‘Thermal conductivity of YbB₄₄Si₂’, *J. Appl. Phys.* **102**, 073510 (2007).
- 68 **G.S. Nolas**, D. Wang and M. Beekman, ‘Transport properties of polycrystalline Mg₂Si_{1-y}Sb_y (0 ≤ y < 0.4)’, *Phys. Rev. B* **76**, 235204 (2007).
- 67 J. Yang, G.P. Meisner, C.J. Rawn, H. Wang, B.C. Chakoumakos, J. Martin, **G.S. Nolas**, B.L. Pedersen, J.K. Stalick, ‘Low temperature transport and structural properties of misch-metal-filled skutterudite’, *J. Appl. Phys.* **102**, 083702 (2007).
- 66 A. Smalley, Q. Lin, J. Martin, **G.S. Nolas** and D. Johnson, ‘The synthesis of the compounds Ln_xCo₄Ge₆Se₆ (Ln = Ce, Eu, Yb)’, *Chem. Mater.* **19**, 6615 (2007).
- 65 J. Martin, **G.S. Nolas**, H. Wang and J. Yang, ‘Thermoelectric properties of silicon-germanium type I clathrates’, *J. Appl. Phys.* **102**, 103719 (2007).
- 64 **G.S. Nolas**, D. Wang and X. Lin, ‘Synthesis and low temperature transport properties of Mg₂Ge_{1-y}Sb_y’, *Physica Status Solidi (Rapid Research Letter)* **1**, 223 (2007).
- 63 M. Beekman and **G.S. Nolas**, ‘Transport properties of the binary type I clathrate K₈Ge₄₄’, *J. Appl. Ceramics Tech* **4**, 332 (2007).
- 62 J. Martin, **G.S. Nolas**, W. Zhang and L. Chen ‘PbTe nanocomposites synthesized from PbTe nanocrystals’, *Appl. Phys. Lett.* **90**, 222112 (2007).
- 61 C.L. Condon, S.M. Kauzlarich and **G. S. Nolas**, ‘Structure and Thermoelectric Characterization of A_xBa_{8-x}Al₁₄Si₃₁ (A = Sr, Eu) Single Crystals’, *Inorganic Chem* **46**, 2556 (2007).
- 60 M. Beekman, W. Wong-Ng, J.A. Kaduk, A. Shipario, and **G.S. Nolas**, ‘Synthesis and single-crystal X-ray diffraction studies of new framework substituted type II clathrates, Cs₈Na₁₆Ag_xGe_{136-x} (x < 7)’, *J. Solid State Chem* **180**, 1076 (2007).
- 59 M. Beekman, J.A. Kaduk, Q. Huang, W. Wong-Ng, Z. Yang, D. Wang, and **G.S. Nolas**, ‘Synthesis and crystal structure of Na_{1-x}Ge_{3+z}: A novel zeolite-like framework phase in the Na-Ge system’, *Chem Comm* **8**, 837 (2007).
- 58 **G.S. Nolas**, M. Beekman, R.W. Ertenberg and J. Yang, ‘Low temperature transport properties of Ni-doped CoGe_{1.5}Se_{1.5}’, *J. Appl. Phys.* **100**, 036101 (2006).
- 57 **G.S. Nolas**, G. Fowler and J. Yang, ‘Assessing the role of filler atoms on the thermal conductivity of filled skutterudites’, *J. Appl. Phys.* **100**, 043705 (2006).
- 56 C.L. Condon, J. Martin, **G.S. Nolas**, P.M.B. Piccoli, A.J. Schultz, and S.M. Kauzlarich, ‘Structure and Thermoelectric Characterization of Ba₈Al₁₄Si₃₁’, *Inorg. Chem.* **45**, 9381 (2006).
- 55 M. Beekman and **G.S. Nolas**, ‘Synthesis and thermal conductivity of type II silicon clathrates’, *Physica B* **383**, 111 (2006).
- 54 R.P. Hermann, V. Keppens, P. Bonville, **G.S. Nolas**, F. Grandjean, G.J. Long, H.M. Christen, B.C. Chakoumakos, B.C. Sales, and D. Mandrus, ‘Direct Experimental Evidence for Atomic Tunneling of Europium in Crystalline Eu₈Ga₁₆Ge₃₀’, *Phys. Rev. Lett.* **97**, 017401 (2006).
- 53 S. Srinath, J. Gass, D.J. Rebar, G.T. Woods, H. Srikanth and **G.S. Nolas**, ‘Giant magnetocaloric effect in clathrates’, *J. Appl. Phys.* **99**, 08K902 (2006).
- 52 G.T. Woods, J. Martin, M. Beekman, R.P. Hermann, Fernande Grandjean, V. Keppens, O. Leupold, G.J. Long, and **G.S. Nolas**, ‘Magnetic and electronic properties of Eu₄Sr₄Ga₁₆Ge₃₀’, *Phys. Rev. B*, **73** 174403 (2006).
- 51 J. Martin, S. Erickson, **G.S. Nolas**, P. Alboni, T.M. Tritt, J. Yang, ‘Structural and transport properties of Ba₈Ga₁₆Si_xGe_{30-x} clathrates’, *J. Appl. Phys.* **99**, 044903 (2006).
- 50 R.P. Hermann, W. Schweika, O. Leupold, R. Ruffer, **G. S. Nolas**, F. Grandjean, and G. J. Long, ‘Neutron and nuclear inelastic scattering study of the Einstein oscillators in Ba, Sr, and Eu filled germanium clathrates’, *Phy. Rev. B* **72**, 174301 (2005).
- 49 **G.S. Nolas**, G. Fowler and J. Yang. ‘Partial Filling of Skutterudites: Optimization for Thermoelectric Applications’, *J. Mater. Res.* **20**, 3234 (2005).
- 48 W. Gou, Y. Li, J. Chi, J.H. Ross, M. Beekman and **G.S. Nolas**, ‘NMR study of slow atomic motion in Sr₈Ga₁₆Ge₃₀ clathrate’, *Phys. Rev. B* **71**, 174307 (2005).
- 47 G.A. Lamberton, Jr., R.H. Tedstrom, T.M. Tritt and **G.S. Nolas**, ‘Thermoelectric Properties of Yb-filled Ge-compensated CoSb₃ Skutterudite Materials’, *J. Appl. Phys.* **97**, 113715 (2005).

- 46 J. Gryko, R.F. Marzke, G.A. Lamberton, T.M. Tritt, M. Beekman and **G.S. Nolas**, ‘Electron structure and temperature dependent shifts in ^{123}Cs NMR spectra of $\text{Cs}_8\text{Ge}_{136}$ clathrate’, *Phys. Rev. B* **71**, 115208 (2005).
- 45 **G.S. Nolas**, G. Yoon, H. Sellinschegg, A. Smalley and D.C. Johnson, ‘Synthesis and Transport properties of $\text{HfFe}_4\text{Sb}_{12}$ ’, *Appl. Phys. Lett.* **86**, 042111 (2005).
- 44 **G.S. Nolas**, J.L. Cohn, J.S. Dyck, C. Uher, G.A. Lamberton and T.M. Tritt, ‘Low-temperature transport properties of polycrystalline $\text{Ba}_8\text{Ga}_{16}\text{Sn}_{30}$ ’, *J. Mater. Res.* **19**, 3556 (2004).
- 43 F. Chen, J. Schulman, Y. Xue, C.W. Chu, **G.S. Nolas**, ‘Thermal conductivity measurement under hydrostatic pressure using the 3-omega method’, *Rev. Sci. Instr.* **75**, 4578 (2004).
- 42 L. Qiu, I.P. Swainson, **G.S. Nolas**, M.A. White, ‘Structure, thermal and transport properties of the clathrates $\text{Sr}_8\text{Zn}_8\text{Ge}_{38}$, $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ and $\text{Ba}_8\text{Ga}_{16}\text{Si}_{30}$ ’, *Phys. Rev. B* **70**, 035208 (2004).
- 41 **G.S. Nolas**, J. Yang and H. Takizawa, ‘Transport properties of germanium-filled CoSb_3 ’, *J. Appl. Phys.* **84**, 5210 (2004).
- 40 J.A. Kaduk, W. Wong-Ng and **G.S. Nolas**, ‘X-ray diffraction patterns of two clathrates, $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ and $\text{Cs}_8\text{Na}_{16}\text{Ge}_{136}$: Promising Candidates for thermoelectric applications’, *The Rigaku Journal* **20**, 2 (2003).
- 39 **G.S. Nolas** C.A. Kendziora and H. Takizawa, ‘Polarized Raman-scattering study of Ge and Sn-filled CoSb_3 ’, *J. Appl. Phys.* **94**, 7440 (2003).
- 38 **G.S. Nolas**, J. Yang and R.W. Ertenberg, ‘Transport properties of $\text{CoGe}_{1.5}\text{Se}_{1.5}$ ’, *Phys. Rev. B* **68**, 193206 (2003).
- 37 Y. Zhang, A. Wilkinson, **G.S. Nolas**, P.L. Lee and J.P. Hodges, ‘Strategies for solving neighboring-element problems: a case study using resonant X-ray diffraction and pulsed neutron diffraction to examine $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ ’, *J. Appl. Crystallography* **36**, 1182 (2003).
- 36 **G.S. Nolas**, M. Beekman, J. Gryko, G. Lamberton, T.M. Tritt and P.F. McMillan, ‘Thermal conductivity of the elemental silicon clathrate Si_{136} ’, *Appl. Phys. Lett.*, **82**, 910 (2003).
- 35 **G.S. Nolas**, C.A. Kendziora, J. Gryko, J. Dong, A. Poddar, C.W. Myles and O.F. Sankey, ‘Raman scattering study of stoichiometric Si and Ge type II clathrates’, *J. Appl. Phys.* **92**, 7225 (2002).
- 34 **G.S. Nolas** and H. J. Goldsmid, ‘The Figure of Merit in Amorphous Thermoelectrics’, *Phys. Stat. Sol. (a)* **194**, 271 (2002).
- 33 C.W. Myles, J. Dong, O.F. Sankey, C.A. Kendziora and **G.S. Nolas**, ‘Vibrational properties of tin clathrate materials’, *Phys. Rev. B* **65**, 235208 (2002).
- 32 Y. Zhang, P.L. Lee, **G.S. Nolas**, and A.P. Wilkinson, ‘Gallium distribution in the clathrate $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ and $\text{Sr}_4\text{Eu}_4\text{Ga}_{16}\text{Ge}_{30}$ by resonant diffraction’, *Appl. Phys. Lett.* **80**, 2931 (2002).
- 31 **G.S. Nolas**, D.G. Vanderveer, A.P. Wilkinson and J.L. Cohn, ‘Temperature Dependent structural and transport properties of the type II clathrates $\text{A}_8\text{Na}_{16}\text{E}_{136}$ ($\text{A} = \text{Cs}$ or Rb and $\text{E} = \text{Ge}$ or Si)’, *J. Appl. Phys.* **91**, 8970 (2002).
- 30 A.P. Wilkinson, C. Lind, R.A. Young, S.D. Shastri, P.L. Lee and **G.S. Nolas**, ‘Preparation, transport properties and structure analysis by resonant x-ray scattering of the type-I clathrate $\text{Cs}_8\text{Cd}_4\text{Sn}_{42}$ ’, *Chem. Mater.* **14**, 1300 (2002).
- 29 **G.S. Nolas**, J.L. Cohn, J. Dyck, C. Uher and J. Yang, ‘Transport properties of Sn-clathrates’, *Phys. Rev. B* **65**, 165201 (2002).
- 28 F. Chen, K.L. Stokes, **G.S. Nolas**, ‘Thermoelectric properties of tin clathrates under hydrostatic pressure’, *J. Phys. Chem. Solids* **63**, 827 (2002).
- 27 G.A. Lamberton, Jr., S. Bhattacharya, R.T. Littleton IV, T.M. Tritt and **G.S. Nolas**, ‘High figure of merit in Eu-filled CoSb_3 skutterudites’, *Appl. Phys. Lett.* **80**, 598 (2002).
- 26 **G.S. Nolas**, J.-M. Ward, J. Gryko, L. Qiu, and M.A. White, ‘Transport properties of $\text{Na}_8\text{Si}_{46}$ ’, *Phys. Rev. B* **64**, 153201 (2001).
- 25 **G.S. Nolas** and G.A. Slack, ‘Thermoelectric Clathrates’, *American Scientist* **89**, 136 (2001).
- 24 R. Patschke, X. Zhang, D. Singh, J. Schindler, C.R. Kannewurf, N. Lowhorn, T.M. Tritt, **G.S. Nolas** and M.G. Kanatzidis, ‘Thermoelectric properties and electronic structure of the cage compounds $\text{A}_2\text{BaCu}_8\text{Te}_{10}$ ($\text{A}=\text{K}$, Rb , Cs) systems with low thermal conductivity’, *Chem. Mater.*

- 13, 613 (2001).
- 23 J.F. Meng, N.V. Chandra Shekar, J.V. Badding and **G.S. Nolas**, ‘Threefold enhancement of the thermoelectric figure of merit for pressure tuned $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ ’, *J. Appl. Phys.* **89**, 1730 (2001).
- 22 **G.S. Nolas** and C.A. Kendziora, ‘Raman scattering study of Ge and Sn compounds with the type-I clathrate hydrate crystal structure’, *Phys. Rev. B* **62**, 7157 (2000).
- 21 **G.S. Nolas**, B.C. Chakoumakos, B. Mahieu, G.J. Long and T.J.R. Weakley, ‘Structural characteristics and thermal conductivity of type-I tin clathrates’, *Chem. Mater.* **12**, 1947 (2000).
- 20 **G.S. Nolas**, M. Kaeser, R. Littleton, IV and T.M. Tritt, ‘High figure of merit partially Ytterbium filled skutterudite materials’, *Appl. Phys. Lett.* **77**, 1855 (2000).
- 19 **G.S. Nolas**, H. Takizawa, T. Endo, H. Sellinschegg and D.C. Johnson, ‘Thermoelectric properties of Sn-filled skutterudites’, *J. Appl. Phys.* **77**, 52 (2000).
- 18 S.B. Schujman, **G.S. Nolas**, R.A. Young, C. Lindt, G.A. Slack, R. Patschke, M.G. Kanatzidis, M. Ulutagay and S.-J. Hwu, ‘Structural analysis of the thermoelectric clathrate compound $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ ’, *J. Appl. Phys.* **87**, 1529 (2000).
- 17 **G.S. Nolas**, T.J.R. Weakley, J.L. Cohn and R. Sharma, ‘Structural properties and thermal conductivity of crystalline Ge-clathrates’, *Phys. Rev. B* **61**, 3845 (2000).
- 16 B.C. Chakoumakos, B.C. Sales, D.C. Mandrus and **G.S. Nolas**, ‘Structural disorder and thermal conductivity of the semiconducting clathrate $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ ’, *J. Alloy Comp.* **296**, 80 (2000).
- 15 B.B. Iversen, A.E.C. Palmqvist, D. Cox, **G.S. Nolas** and G.D. Stucky, N. Blake and H. Metiu, ‘Why are clathrates good thermoelectric materials?’, *J. Solid State Chem* **149**, 455 (2000).
- 14 **G.S. Nolas**, T.J.R. Weakley and J.L. Cohn, ‘Structural, chemical and transport properties of a new clathrate compound: $\text{Cs}_8\text{Zn}_4\text{Sn}_{42}$ ’, *Chem. Mater.* **11**, 2470 (1999).
- 13 **G.S. Nolas** and H.J. Goldsmid, ‘A comparison of projected thermoelectric and thermionic refrigeration’, *J. Appl. Phys.* **85**, 4066 (1999).
- 12 **G.S. Nolas** and C.A. Kendziora, ‘A Raman spectroscopy investigation of lanthanide-filled and unfilled skutterudites’, *Phys. Rev. B* **59**, 6189 (1999).
- 11 J.L. Cohn, **G.S. Nolas**, V. Fessatidis, T.H. Metcalf and G.A. Slack, ‘Glass-like heat conduction in high-mobility crystalline semiconductors’, *Phys. Rev. Lett.* **82**, 779 (1999).
- 10 **G.S. Nolas**, J.L. Cohn, G.A. Slack and S.B. Schujman, ‘Semiconductor Ge-clathrates: promising candidates for thermoelectric applications’, *Appl. Phys. Lett.* **73**, 176 (1998).
- 9 **G.S. Nolas**, J.L. Cohn and G.A. Slack, ‘The effect of partial void filling on the lattice thermal conductivity of skutterudites’, *Phys. Rev. B* **58**, 164 (1998).
- 8 **G.S. Nolas**, V.G. Harris, T.M. Tritt and G.A. Slack, ‘Low-temperature transport properties of the mixed-valence semiconductor $\text{Ru}_{0.5}\text{Pd}_{0.5}\text{Sb}_3$ ’, *J. Appl. Phys.* **80**, 6304 (1996).
- 7 T.M. Tritt, **G.S. Nolas**, G.A. Slack, D.T. Morelli, A.C. Ehrlich, D.J. Gillespie and J.L. Cohn, ‘Low temperature transport properties of the filled and unfilled IrSb_3 skutterudite system’, *J. Appl. Phys.* **79**, 8412 (1996).
- 6 **G.S. Nolas**, G.A. Slack, D.T. Morelli, T.M. Tritt and A.C. Ehrlich, ‘The effect of rare-earth-filling on the lattice thermal conductivity of Skutterudites’, *J. Appl. Phys.* **79**, 4002 (1996).
- 5 **G.S. Nolas**, G.A. Slack, T. Caillat and G.P. Meisner, ‘Raman scattering study of antimony-based skutterudites’, *J. Appl. Phys.* **79**, 2622 (1996).
- 4 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, ‘Intra-4f electronic Raman scattering in cerium-doped scandium oxide and barium gadolinium tantalate’, *J. Lum.* **63**, 124 (1995).
- 3 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, ‘Site-selective electronic Raman excitation spectroscopy of the lowest 4f5d transitions of $\text{Ce}^{3+}:\text{Y}_2\text{O}_3$ ’, *Opt. Lett.* **19**, 1574 (1994).
- 2 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, ‘Electronic Raman scattering study of the low-lying energy levels of trivalent cerium-doped yttria’, *Phys. Rev. B* **50**, 150 (1994).
- 1 G.A. Slack, S.L. Dole, V.G. Tsoukala and **G.S. Nolas**, ‘The optical absorption spectrum of trivalent cerium in Y_2O_3 , $\text{Ba}_2\text{GdTaO}_6$, ThO_2 and related compounds’, *J. Opt. Soc. Am. B* **11**, 961 (1994).

Plenary and Invited Conference Presentations, Seminars, Colloquia and Workshops (86)

- 86 G.S. Nolas, 'Open-framework and other low thermal conductivity materials: Expanding our fundamental understanding in pursuit of technological applications', Invited, presented at the Materials Challenges in Alternative and Renewable Energy conference, Clearwater, FL, April 20, 2016.
- 85 G.S. Nolas, 'The search for low thermal conductivity semiconductors: A thermoelectric success story', Invited, Department of Mechanical Engineering Seminar, Rutgers University, Newark, NJ, February 17, 2016.
- 84 G.S. Nolas, 'New Thermoelectric Materials & Device-related Developments', Invited, National Institute for Materials Science, Tsukuba, Japan, February 4, 2015.
- 83 G.S. Nolas, 'Materials program at the University of South Florida', Invited, II-VI Incorporated R&D Center, Saxonburg, PA, April 21, 2015.
- 82 G.S. Nolas, 'From new materials research and theoretical guidance to device development: A synergistic approach to Thermoelectrics research', Invited, American Chemical Society conference, Boston, MA, August 17, 2015.
- 81 G.S. Nolas, 'Silicon clathrates: Novel materials with unique crystal structures that allow for unique physical properties that are of technological interest', Invited, International Conference on Exotic Forms of Silicon, Golden, CO, July 16, 2015.
- 80 G.S. Nolas, 'Inorganic clathrates and other open-framework low thermal conductivity materials', Invited, Electronic Materials and Applications conference, Orlando, FL, January 23, 2015.
- 79 G.S. Nolas, 'From New Materials to Device Development: A Synergistic Approach to Thermoelectrics Research', Invited, presented at the 4th IAV Thermoelectrics Conference, Berlin, Germany, December 11, 2014.
- 78 G.S. Nolas, J. Sharp, A. Thompson and R. McCarty, 'Thermoelectric Modules for a Prototype Waste Heat Recovery System', Invited, presented at the 4th IAV Thermoelectrics Conference, Berlin, Germany, December 11, 2014.
- 77 G.S. Nolas, 'Thermoelectrics: Introduction and New Materials and Device Developments', Invited, Inorganic Chemistry Seminar, Max Planck Institute for the Chemical Physics of Solids, Dresden, Germany, November 13, 2014.
- 76 G.S. Nolas, 'A Synergistic Experimental, Computational, and Device Development Approach to New Thermoelectric Materials Research', Invited, presented at the 12th European Conference on Thermoelectrics, Madrid, Spain, September 25, 2014
- 75 G.S. Nolas, 'Making Materials: Traditional, Innovative and Unique Approaches to New Thermoelectric Materials Research', Invited, presented at the Highly Effective Applications of Thermoelectrics Research workshop, University of Toronto, Toronto, Canada, July 12, 2014.
- 74 G.S. Nolas, 'Bulk Thermoelectric Materials Research: A Synergistic Experimental, Computational and Device Development Approach', Invited, presented at the International Conference on Thermoelectrics, Nashville, TN, July 9, 2014.
- 73 G.S. Nolas, 'Crystal Growth and Structure-property Relationships of Novel Group IV Materials', Invited, presented at the Collaborative Conference on Materials Research, Incheon, South Korea, June 23, 2014.
- 72 G.S. Nolas, 'Thermoelectrics Research: New Materials-related Approaches, Theoretical Guidance and Device Development', Invited, presented at the 6th Forum on New Materials conference, Montecatini Terme, Italy, June 17, 2014.
- 71 G.S. Nolas, 'Synthesis and Optimization of the Thermoelectric Properties of p-type Skutterudites', Invited, presented at the 10th Pacific Rim Conference on Ceramic and Glass Technology Conference, San Diego, California, June 4, 2013.
- 70 G.S. Nolas, Y. Dong, M. Barako, M. Ashghi, K.E. Goodson G. Samsonidze and B. Kozinsky, 'Thermoelectric Research for Automobile Applications: An experimental and computational Approach to Materials and Interfaces', Invited, presented at the European Materials Research Society Conference, Strasbourg, France, May 28, 2013.

- 69 G.S. Nolas, 'Silicon Clathrates: Interesting Crystal Structures with Potential Technological Applications', Invited, presented at the 44th American Chemical Society Central Regional Meeting, Mt. Pleasant, Michigan, May 16, 2013.
- 68 G.S. Nolas, 'Inorganic Clathrates: Materials with Interesting Crystal Structures and Potential for Technological Applications', Invited, Colorado School of Mines Physics Seminar, Golden, Colorado, April, 18, 2013.
- 67 G.S. Nolas, 'New Crystal Growth Techniques in Investigating Single-crystal Inorganic Clathrates', Invited, presented at the Collaborative Conference on Crystal Growth, Orlando, Florida, December 12, 2012.
- 66 G.S. Nolas, 'Enhanced Thermoelectric Properties in Nanostructured Materials: "The Bottom-up" Approach', Invited, Binghamton University Physics Colloquium, Binghamton, New York, March 19, 2012.
- 65 G.S. Nolas, 'New Synthesis Techniques and Strategies for Materials Research towards Solid-state Power Conversion and Refrigeration Application', Invited, Max Planck Institute for the Chemical Physics of Solids, Dresden, Germany, March 18, 2011.
- 64 G.S. Nolas, 'A Bottom-up Approach for Nanostructured Thermoelectrics', Invited, 9th European Conference on Thermoelectrics, September 30, Thessaloniki, Greece, 2011.
- 63 G.S. Nolas, A. Datta, J. Paul, A. Popescu, and L. Woods, 'Bottom-up Approach for the Synthesis of Thermoelectric Materials with Nano-scale Domains', Invited, International Symposium on Ceramics for Electric Energy Generation, Storage and Distribution within the 35th International Conference on Advanced Ceramics and Composites, January 27, Daytona Beach, Florida, 2011.
- 62 G.S. Nolas, 'The "Bottom-up" Approach for Thermoelectric Nanocomposites', Invited, Thermoelectrics Applications Workshop, January 4, San Diego, California, 2011.
- 61 G.S. Nolas, 'Bottom-up Approach for Enhanced Thermoelectric Properties in Materials with Nano-Scale Domains', Invited, Department of Physics Colloquium, University of Central Michigan, September 2nd, 2010, Mount Pleasant, Michigan.
- 60 G. Nolas, 'Bottom-Up Approach for the Synthesis of Thermoelectric Materials with Nano-Scale Domains', Invited, 35th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27, 2011.
- 59 G.S. Nolas, 'Thermoelectric Nanocomposite Chalcogenides', Invited, 451st Wilhelm and Else Heraeus Seminar on Nanostructured Thermoelectric Materials, Bad Honnef, Germany, February 23, 2010.
- 58 G.S. Nolas, 'Enhanced Power Factor in Nanocomposite Chalcogenides', Invited, DOE Energy Efficiency and Renewable Energy Thermoelectrics Applications Workshop, San Diego, CA, October 1, 2009.
- 57 G.S. Nolas, 'Enhanced Power Factor in Nanocomposite Materials and Magnetocaloric Materials', Invited, 8th Pacific Rim Conference on Ceramic and Glass Technology (PacRim8), Vancouver, Canada, May 31 – June 5, 2009.
- 56 G.S. Nolas, 'Thermal Conductivity of Novel Thermoelectric Materials and Open-structured Compositions', Invited Lecturer, Summer School on the Thermal Conductivity and Related Phenomena in Oxides, University of Florida Campus, Gainesville, FL, May 17 – 22, 2009
- 55 G.S. Nolas, 'Fundamental Properties of Open-framework Intermetallic Materials of Group 14', Invited, 85th Florida American Chemical Society Annual Meeting and Exposition (FAME), Orlando, FL, May 16, 2009.
- 54 G.S. Nolas, 'Fundamental Investigation of Open-framework Materials of Group 14', Invited, Texas Tech University Physics Colloquium, Lubbock, TX, March 26, 2009.
- 53 G.S. Nolas, 'Structure-property Relationships in Skutterudites, Clathrates and Other Open-structured Materials', Plenary Presentation, 27th International Conference on Thermoelectrics, Corvallis, OR, August 4, 2008
- 52 G.S. Nolas, 'Open-framework Inorganic Materials', Invited, National Institute of Standards and Technology, Gaithersburg, MD, July 22, 2008.

- 51 G.S. Nolas, J. Martin, M. Beekman and X.N. Lin, 'Bulk materials research for thermoelectric power generation applications', Invited, Materials Research Society Conference, Boston, MA, November 27, 2007.
- 50 G.S. Nolas, 'Bulk materials research for thermoelectric power conversion applications', Invited, Seventh Pacific Rim Conference on Ceramic and Glass Technology, Shanghai, China November 12, 2007.
- 49 G.S. Nolas, 'Materials research for thermoelectric power conversion', Invited, Shanghai Institute of Ceramics, Shanghai, China, November 15, 2007.
- 48 G.S. Nolas, 'Fundamental study of inorganic clathrates', Invited, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, August 7, 2007.
- 47 G.S. Nolas, 'Novel Materials for Energy Technology', Invited, University of Kentucky Physics Seminar, Lexington, KY, March 21, 2007.
- 46 G.S. Nolas, 'Overview and new directions in bulk materials research for thermoelectric power generation applications', Invited, 31st International Cocoa Beach Conference & Exposition on Advanced Ceramics and Composites, Daytona, FL, January 21, 2007.
- 45 G.S. Nolas, 'Structure-property relationships in novel materials', Invited, University of Alabama Birmingham Physics Colloquium, Birmingham, Alabama, March 17, 2006.
- 44 G.S. Nolas, 'Structure-property relationships in novel materials: Clathrates', Invited, Auburn University Physics Colloquium, Auburn, Alabama, February 17, 2006.
- 43 G.S. Nolas, 'Structure and transport properties of silicon clathrates', Invited, Third Hiroshima Workshop on Novel Functional Materials with Multinary Freedom, Hiroshima, Japan, November 17, 2005.
- 42 G.S. Nolas, 'Structure-Property relationships in novel materials: Clathrates', Invited, Ubiquen Seminar, National Institute of Advanced Industrial Science and Technology (AIST), Osaka, Japan, November 14, 2005.
- 41 G.S. Nolas, 'Structural, transport, magnetic and thermal properties of type I and II clathrates', Invited, American Physical Society March Meeting, Los Angeles, CA, March 21, 2005
- 40 G.S. Nolas, 'Clathrates: Novel materials with technological potential', Invited, Department of Materials Science, University of Tennessee, Knoxville, TN, March 15, 2005.
- 39 G.S. Nolas, 'Research on inorganic materials with the clathrate-hydrate crystal structure', Invited, Department of Chemistry, University of Florida, Gainesville, FL, November 10, 2004.
- 38 G.S. Nolas, 'Type II germanium clathrates for thermoelectric applications', Invited, Direct Energy Conversion Workshop, Coronado, CA, December 11-13, 2004.
- 37 G.S. Nolas, 'Silicon clathrates and alloys for high temperature thermoelectric applications', Invited, STMC Materials Workshop, Presented at the NASA Jet Propulsion Laboratory, Pasadena, CA, November 8, 2004.
- 36 G.S. Nolas, 'Overview and new directions in bulk materials research for thermoelectric power generation', Plenary Presentation at the International Thermoelectrics Conference, July 26, 2004, Adelaide, Australia.
- 35 G.S. Nolas, 'Applied physics in industry', Invited, University of South Florida Society of Physics Students, April 7, 2004.
- 34 G.S. Nolas, 'Thermal Conductivity of Clathrates', Invited, International Thermal Conductivity / Thermal Expansion Conference, Knoxville, TN, October 27, 2003.
- 33 G.S. Nolas, 'Transport properties of clathrate Zintl phases', Invited, American Chemical Society, New York, NY, September 8, 2003.
- 32 G.S. Nolas, 'Transport properties of Group-IV Clathrates', Invited, Joint Physics and Materials Science Seminar, Texas A&M University, College Station, TX, February 28, 2003.
- 31 G.S. Nolas, 'Thermoelectric Clathrates', Invited, Thermoelectrics Workshop: Chemistry, Physics and Materials Science of Thermoelectrics Beyond Bismuth Telluride, Traverse City, MI, August 17, 2002.
- 30 G.S. Nolas, 'Zeolite-like Semiconductors: Science and Technology', Invited, Joint Chemistry & Physics Seminar, Jacksonville State University, AL, November 1, 2002.

- 29 G.S. Nolas, 'Clathrate semiconductors: Scientifically interesting materials with technological importance', Invited, General Motors R&D and Planning, Warren, MI, August 15, 2002.
- 28 G.S. Nolas, 'Localized Disorder in Crystalline Materials: Structure-Property Relationships in Zeolite-like Semiconductors', Invited, Michigan State University Department of Electrical and Computer Engineering Seminar, East Lansing, MI, March 14, 2002.
- 27 G.S. Nolas, 'Open structured Semiconductors: Scientifically Interesting Materials with Technological Importance', Invited, University of Mississippi Department of Physics and Astronomy Seminar, Oxford, MS, April 30, 2002.
- 26 G.S. Nolas, 'Semiconducting Clathrates: Promising Candidates for Thermoelectric Applications', Invited, Physics Colloquium, University of South Florida, Tampa, FL, February 12, 2001.
- 25 G.S. Nolas, 'Thermoelectric "open structure" materials', Invited, Department of Electrical and Materials Engineering Seminar, Science University of Tokyo at Yamaguchi, Ube, Japan, January 18, 2001.
- 24 G.S. Nolas, "'Open structure" semiconductors: clathrate and channel compounds for low thermal conductivity thermoelectric materials', Invited, Materials Research Society, Solid State Chemistry Symposium, Boston, MA, November 30, 2000.
- 23 G.S. Nolas, 'Low Thermal Conductivity Solids', Guest Lecturer for a graduate course in Semiconductor Physics, Department of Physics, Texas Tech University, Lubbock, TX, November 9, 2000.
- 22 G.S. Nolas, 'Structure-property relationships: A Thermoelectric Problem?', Invited, Physics Seminar, Texas Tech University, Lubbock, TX, November 2, 2000.
- 21 G.S. Nolas, 'Thermal Properties of Novel Framework Materials', Invited, Department of Chemistry Seminar, Georgia Institute of Technology, Atlanta, GA, October 16, 2000.
- 20 G.S. Nolas, 'Semiconductors with an "open structure": Materials with potential for thermoelectric applications', Plenary, presented at the American Ceramics Society, Electronics Materials Division meeting, Clemson, SC, October 10, 2000.
- 19 G.S. Nolas, 'Low thermal conductivity semiconductors (high and low temperature materials) for thermoelectric applications', Invited, Department of Chemistry Seminar, Nagoya University, Nagoya, Japan, June 29, 2000.
- 18 G.S. Nolas, 'Skutterudites: Low thermal conductivity semiconductors for thermoelectric applications', Invited, Department of Materials Chemistry Seminar, Tohoku University, Sendai, Japan, June 26, 2000.
- 17 G.S. Nolas, 'Low thermal conductivity semiconductors with potential for thermoelectric applications', Invited, Thermoelectrics Seminar, Shonan Institute of Technology Alumni Center, Tokyo, Japan, June 20, 2000.
- 16 G.S. Nolas, 'Elements of thermoelectrics', Invited, American Institute of Chemical Engineers, North Texas Regional Meeting, Dallas, TX, March 2, 2000.
- 15 G.S. Nolas, 'Rattling atoms in open structured semiconductors: potential for thermoelectric applications', Invited, Department of Physics Colloquium, University of North Texas, Denton, TX, October 6, 1999.
- 14 G.S. Nolas, 'Thermoelectric materials: theory, applications and the future', Invited, Department of Physics Colloquium, University of New Orleans, New Orleans, LA, April 9, 1999.
- 13 G.S. Nolas, 'The phonon-glass electron-crystal approach to thermoelectric materials research', Invited, combined Physics and Materials Science Department Seminar, University of North Texas, Denton, TX, February 23, 1999.
- 12 G.S. Nolas, 'Glass-like thermal transport properties in semiconductors: applications for thermoelectrics', Invited, Condensed Matter and Optics Seminar, Department of Physics, Rensselaer Polytechnic Institute, Troy, NY, December 7, 1998.
- 11 G.S. Nolas, 'Semiconducting clathrates: a PGEC system with potential for thermoelectric applications', Invited, Materials Research Society meeting in Boston, November 30-December 3, 1998.

- 10 G.S. Nolas, 'Thermoelectrics for cooling and power generation', Invited, Department of Physics Seminar, Department of Physics, Clemson University, Clemson, SC, August 11, 1998.
- 9 G.S. Nolas, 'Novel materials research for thermoelectrics applications', Invited, presented at the Corporate Manufacturing Research Center, Motorola, Schaumburg, IL, June 12, 1998.
- 8 G.S. Nolas, 'The next generation of thermoelectric materials', Invited, Seventeenth International Conference on Thermoelectrics, Nagoya, Japan, May 26, 1998.
- 7 G.S. Nolas, 'Clathrates: The next generation of thermoelectric materials', Invited, Mini-Symposium on Clathrate Research, Center for Solid State Science, Arizona State University, Tempe, AZ, February 11, 1998.
- 6 G.S. Nolas, 'Thermoelectric research through innovation', Invited, Organic/Inorganic Chemistry Seminar, University of Oregon, Eugene, OR, November 14, 1997.
- 5 G.S. Nolas, 'Skutterudites: potential for thermoelectric cooling applications', Invited, Seminar, U.S. Naval Research Laboratory, Washington, DC, June 19, 1997.
- 4 G.S. Nolas and H.B. Lyon, 'Thermoelectrics in industry: needs, desires and potential', Invited, Third European Workshop on Thermoelectrics, Cardiff, UK, September 16 and 17, 1996.
- 3 G.S. Nolas, 'The effect of rare-earth-filling on skutterudites', Invited, Marlow Industries, Inc., Dallas, TX, November 20, 1995.
- 2 G.S. Nolas, 'New thermoelectric materials based on IrSb_3 ', Invited, Optics and Condensed Matter Seminar, Department of Physics, Rensselaer Polytechnic Institute, Troy, NY, April 17, 1995.
- 1 G.S. Nolas and V. G. Tsoukala, 'Electronic Raman scattering of rare earth-doped metal oxides', Invited, General Electric Research and Development Center, Schenectady, NY, August 25, 1992.

Conference Proceedings – from presentations (70, refereed)

- 70 A. Popescu, A. Datta, **G.S. Nolas** and L. Woods, ‘Tailoring Thermoelectric Properties of Bismuth: Theoretical Investigations’, American Institute of Physics Conference Proceedings **1449**, 9th European Conference on Thermoelectrics, pp. 45 – 48, 2012.
- 69 L.M. Woods, A. Popescu, J. Martin, and **G.S. Nolas**, ‘Transport Properties of Thermoelectric Nanocomposites’, Proc. Mater. Rec. Soc. **1166**, 121 (2009).
- 68 H. Kirby, J. Martin, A. Datta, L. Chen, **G.S. Nolas**, ‘Enhanced thermoelectric properties in PbTe nanocomposites’, Proc. Mater. Rec. Soc. **1166**, 71 (2009).
- 67 S. Stefanoski, A.V. Shevelkov and G.S. Nolas, ‘Transport properties of Sn₂₄P_{19.3}Br₈ and Sn₁₇Zn₇P₂₂Br₈’, Developments in Strategic Materials: Ceramic Engineering and Science Proceedings 29, Issue 10 (2009).
- 66 D. Wang and G.S. Nolas, ‘Thermoelectric properties of the mixed-crystal compound Mg₂Si-Mg₃Sb₂’, Advances in Electronic Ceramics **28**, 185 (2009)
- 65 M. Beekman, C.P. Sebastian, Y. Grin and **G.S. Nolas**, ‘Synthesis, Crystal Structure, and Transport Properties of Na₂₂Si₁₃₆’, J. Electronic Materials **38**, 1136 (2009)
- 64 N. Crane, P. Mishra, J.L. Murray and **G.S. Nolas**, ‘Self-Assembly for Integration of Microscale Thermoelectric Cooler’, J. Electronic Materials **38**, 1252 (2009).
- 63 **G.S. Nolas**, X. Lin, J. Martin, M. Beekman and H. Wang, ‘Open-structured Materials: Skutterudites and Clathrates’, J. Electronic Materials **38**, 1052 (2009).
- 62 S. Stefanoski, L.N. Reshetova, A.V. Shevelokov, and **G.S. Nolas**, ‘Low-Temperature Transport Properties of Sn₂₄P_{19.3}Br₈ and Sn₁₇Zn₇P₂₂Br₈’, J. Electronic Materials **38**, 985 (2009).
- 61 D. Wang and **G.S. Nolas**, ‘Thermoelectric Properties of mix-crystals of Mg₂E (E=Si, Ge)-Mg₃Sb₂’, Ceramic Eng. and Sci. Proc. **28**(8), 185 (2008).
- 60 R.H. Hyde, M. Beekman, D. Mukherjee, **G.S. Nolas**, P. Mukherjee and S. Witanachchi, ‘Growth and characterization of germanium-based type I clathrate thin films deposited by pulsed laser ablation’, Ceramic Eng. and Sci. Proc. **28**(8), 211 (2008).
- 59 N.D. Lowhorn, W. Wong-Ng, W. Zhang, Z.Q. Lu, M. Otani, E. Thomas, M. Green, T.N. Tran, N.R. Dilley, N. Elsner, T. Hogan, Q. Li, H. Obara, J. Sharp, R. Venkatasubramanian, R. Willigan, J. Yang, **G.S. Nolas** and T.M. Tritt, ‘Round-robin studies of two potential Seebeck coefficient standard reference materials’, Proceedings of the Twenty-Sixth International Conference on Thermoelectrics, 2008.
- 58 **G.S. Nolas**, M. Beekman J. Martin, D. Wang and X.N. Lin, ‘Bulk materials research for thermoelectric power generation applications’, Mat. Res. Soc. Symp. Proc. **1044**, 155 (2008).
- 57 M. Beekman and **G.S. Nolas**, ‘Synthesis and characterization of inorganic clathrate-II materials’, Mat. Res. Soc. Symp. Proc. **1044**, 173 (2008).
- 56 X. Lin, D. Wang, M. Beekman and **G. S. Nolas**, ‘Synthesis and thermoelectric properties of antiferroite materials’, Mat. Res. Soc. Symp. Proc. **1044**, 469 (2008).
- 55 J. Martin, S. Stefanoski, L. Wang, L. Chen and **G.S. Nolas**, ‘Synthesis and thermoelectric properties of lead chalcogenide nanocomposites’, Mat. Res. Soc. Symp. Proc. **1044**, 13 (2008).
- 54 N.D. Lowhorn, W. Wong-Ng, W. Zhang, Z.Q. Lu, M. Otani, E. Thomas, M. Green, T.N. Tran, N.R. Dilley, N. Elsner, T. Hogan, Q. Li, H. Obara, J. Sharp, R. Venkatasubramanian, R. Willigan, J. Yang, **G.S. Nolas** and T.M. Tritt, ‘Round-robin studies of two potential Seebeck coefficient standard reference materials’, Proceedings of the Twenty-Sixth International Conference on Thermoelectrics, 2007, p. 366.
- 53 J. Martin, D. Wang and **G.S. Nolas**, ‘Synthesis and characterization of nanocrystalline chalcogenides’ Proc. Adv. Elec. Ceramics **28**(8), 221 (2007).
- 52 N. Crane, M. Nellis, **G.S. Nolas** and J. Harman, ‘Microscale Freeform Integration by Directed Self Assembly’, Proceedings of the Solid Freeform Fabrication Symposium, in press (2007).
- 51 M. Beekman, and **G. S. Nolas**, ‘Preparation and Physical Properties of Group IV Clathrates’, Proc. Adv. Elec. Ceramics **28**(8), 233 (2007).

- 50 S. Witanachchi, R. Hyde, V. Vithianathan, M. Beekman, P. Mukherjee and **G.S. Nolas**,
'Synthesis and characterization of bulk and thin film type I and type II clathrate materials for
thermoelectric and optoelectronic application', Proc. of the Twenty Fifth International
Conference on Thermoelectrics (IEEE catalog # 06TH8931, Piscataway, NJ, 2006), p. 44.
- 49 R.P. Hermann, F. Grandjean, V. Keppens, W. Schweitka, **G.S. Nolas**, D.G. Mandrus, B.C. Sales,
H.M. Christen, P. Bonville and G.J. Long, 'The dynamics of the guests in filled germanium
clathrates', Mat. Res. Soc. Symp. Proc. **886**, 389 (2006).
- 48 M. Beekman, J. Gryko and **G.S. Nolas**, 'Transport properties of type II sodium-silicon
clathrates', Mat. Res. Soc. Symp. Proc. **886**, 395 (2006).
- 47 S. Witanachchi, R. Hyde, H.S. Nagaraja, M. Beekman, **G.S. Nolas** and P. Mukherjee, 'Growth
and characterization of germanium-based type I clathrate thin films deposited by pulsed laser
ablation', Mat. Res. Soc. Symp. Proc. **886**, 401 (2006).
- 46 J. Martin, S. Erickson, **G.S. Nolas**, P. Alboni and T.M. Tritt, "Thermoelectric Properties of
Ba-Filled Si-Ge Alloy Type I Semiconducting Clathrates", Proceedings of the Twenty Fourth
International Conference (IEEE catalog # 05TH8854, Piscataway, NJ, 2005), p. 223.
- 45 M. Beekman, J. Gryko, H.F. Rubin, J.A. Kaduk, W. Wong-Ng, and **G.S. Nolas**, 'Synthesis
and Transport Properties of Type II Clathrates', Proceedings of the Twenty Fourth
International Conference (IEEE catalog # 05TH8854, Piscataway, NJ, 2005), p. 219.
- 44 G. Fowler and **G.S. Nolas**, 'Assessing the role of the filler atoms on the thermal conductivity
of filled-skutterudites', Proceedings of the Twenty Fourth International Conference (IEEE
catalog # 05TH8854C, Piscataway, NJ, 2005), p. 448.
- 43 **G.S. Nolas**, M. Beekman, J. Martin, H.F. Rubin, S. Erickson, G.A. Lamberton, and T.M.
Tritt, 'Research on "Open Structured" materials for thermoelectric power generation',
Proceedings of the Twenty Third International Thermoelectrics Conference (IEEE,
Piscataway, NJ, 2005), p. 10.
- 42 C.A. Kendziora and **G.S. Nolas**, 'Phonons and Thermal Conductivity in Skutterudite
Thermoelectrics', Mat. Res. Soc. Symp. Proc. **793**, 107 (2004).
- 41 R. Ertenberg, M. Beekman, J. Martin, G. Fowler, J. Yang and **G.S. Nolas**, 'CoGe_{1.5}Se_{1.5}:
Synthesis and Characterization', Mat. Res. Soc. Symp. Proc. **793**, 239 (2004).
- 40 **G.S. Nolas**, 'Clathrate Thermoelectrics', Proceedings of the 27th Thermal Conductivity / 15th
Thermal Expansion Conference (DEStech Publications, Lancaster, PA, 2004) p. 32.
- 39 M.A. White, L. Qiu and **G.S. Nolas**, 'Simple Method for Estimation of Heat Capacity of
Solids: Implications for Thermoelectrics', Proceedings of the 27th Thermal Conductivity / 15th
Thermal Expansion Conference (DEStech Publications, Lancaster, PA, 2004) p. 72.
- 38 Matt Beekman, **G.S. Nolas**, Jan Gryko, Gary A. Lamberton, Jr., Terry M. Tritt, and Chris A.
Kendziora, 'Transport and optical properties of the type II clathrates Cs₈Na₁₆Si₁₃₆ and Si₁₃₆',
Low Temperature Electronics and Low Temperature Co-fired Ceramic Based Electronic Devices
(ECS, Pennington, NJ, 2004) p. 271.
- 37 **G.S. Nolas** and H.J. Goldsmid, 'Amorphous Thermoelectrics', Proceedings of the Twenty First
International Conference on Thermoelectrics, (IEEE Catalog # 02TH8657, Piscataway, NJ,
2002), p. 296.
- 36 F. Chen, K.L. Stokes and **G.S. Nolas**, 'Pressure effect of Seebeck coefficient for zinc doped tin
Clathrates', Mat. Res. Soc. Symp. Proc. **691**, 93 (2002).
- 35 R.H. Tedstrom, G.A. Lamberton, T.M. Tritt and **G.S. Nolas**, 'High temperature electrical
transport properties of Eu and Yb-doped skutterudites', Mat. Res. Soc. Symp. Proc. **691**, 221
(2002).
- 34 G.A. Lamberton, R.H. Tedstrom, T.M. Tritt and **G.S. Nolas**, 'Thermoelectric Properties of Eu-
doped CoSb₃', Mat. Res. Soc. Symp. Proc. **691**, 31 (2002).
- 33 R.F. Marzke, **G.S. Nolas** and J. Gryko, '¹³³Cs and ²³Na NMR studies of Cs₈Na₁₆Ge₁₃₆ clathrates',
Mat. Res. Soc. Symp. Proc. **691**, 439 (2002).

- 32 GH. Anno, K. Ashida, K. Matsubara, **G.S. Nolas**, K. Akai, M. Matsuura and J. Nagao, 'Electronic structure and thermoelectric properties of ytterbium-filled skutterudites', *Mat. Res. Soc. Symp. Proc.* **691**, 49 (2002).
- 31 H. Takizawa, K. Okazaki, K. Uheda, T. Endo and **G.S. Nolas**, 'High Pressure Synthesis of New Filled Skutterudites', *Mat. Res. Soc. Symp. Proc.* **691**, 37 (2002).
- 30 **G.S. Nolas**, "'Open structure" materials with unique properties and potential for thermoelectric applications', *Proc. Fourth Pacific Rim Int. Conf. on Advanced Materials and Processing (PRICM4, The Japan Institute of Metals, 2001)*, p. 2113.
- 29 **G.S. Nolas**, C. Lind, A. Wilkinson and J.L. Cohn, 'Temperature dependent single crystal structural and thermoelectric properties of $\text{Cs}_8\text{Na}_{16}\text{Si}_{136}$ and $\text{Cs}_8\text{Na}_{16}\text{Ge}_{136}$ ', *Proceedings of the Twentieth International Conference on Thermoelectrics (IEEE catalog # 01TH8589, Piscataway, NJ, 2002)*, p. 254.
- 28 H.J. Goldsmid and **G.S. Nolas**, 'A review of new thermoelectric materials', *Proceedings of the Twentieth International Conference on Thermoelectrics (IEEE catalog # 01TH8589, Piscataway, NJ, 2002)*, p. 1.
- 27 H. Anno, **G.S. Nolas**, K. Akai, K. Ashida, M. Matsuura and K. Matsubara, 'Electronic structure of Yb-filled CoSb_3 skutterudites studied by x-ray photoelectron spectroscopy', *Proceedings of the Twentieth International Conference on Thermoelectrics (IEEE catalog # 01TH8589, Piscataway, NJ, 2002)*, p. 61.
- 26 T.M. Tritt, R.T. Littleton, A.L. Pope, S. Bhattacharya, M. Kaeser, J.W. Kolis, S.J. Poon, V. Ponnambalam, Y. Xia, **G.S. Nolas**, J.S. Olson and R. Gagnon, 'Strategies for the investigation of new bulk materials for thermoelectric applications', *Proceedings of the Nineteenth International Conference on Thermoelectrics (IEEE catalog # 01TH8589, Piscataway, NJ, 2002)*, p. 5.
- 25 **G.S. Nolas**, "'Open Structure" semiconductors: Clathrate and channel compounds for low thermal conductivity thermoelectric materials', *Mat. Res. Soc. Symp. Proc.* **658**, GG11.1 (2001).
- 24 **G.S. Nolas**, J.L. Cohn, M. Kaeser and T.M. Tritt, 'Thermal conductivity of type I and II clathrate compounds', *Mat. Res. Soc. Symp. Proc.* **626**, Z13.1 (2001).
- 23 **G.S. Nolas**, M. Kaeser, T.M. Tritt, H. Sellinschegg, D.C. Johnson and E. Nelson, 'Partially-filled skutterudites: Optimizing the thermoelectric properties', *Mat. Res. Soc. Symp. Proc.* **626**, Z10.1 (2001).
- 22 H. Sellinschegg, J.R. Williams, G. Yoon, D.C. Johnson, M. Kaeser, T.M. Tritt, **G.S. Nolas** and E. Nelson, 'The synthesis of metastable skutterudites and crystalline superlattices', *Mat. Res. Soc. Symp. Proc.* **626**, Z1.1.1 (2001).
- 21 H. Sellinschegg, D.C. Johnson, M. Kaeser, T.M. Tritt, **G.S. Nolas** and E. Nelson, 'Bulk synthesis of completely and partially filled Sn filled CoSb_3 using the multilayer repeat method', *Mat. Res. Soc. Symp. Proc.* **626**, Z10.2 (2001).
- 20 J.R. Williams, D.C. Johnson, M. Kaeser, T.M. Tritt, **G.S. Nolas** and E. Nelson, 'Synthesis and physical properties of skutterudite superlattices', *Mat. Res. Soc. Symp. Proc.* **626**, Z2.3 (2001).
- 19 N.A. Ghelani, S.Y. Loo, D. Chung, S. Sportouch, S. de Nardi, M.G. Kanatzidis, T.P. Hogan and **G.S. Nolas**, 'Characterization of new materials in a four-sample thermoelectric measurement system', *Mat. Res. Soc. Symp. Proc.* **626**, Z8.6 (2001).
- 18 **G.S. Nolas**, J.L. Cohn, B.C. Chakoumakos and G.A. Slack, 'Glass-like thermal conductivity in crystalline semiconductors', *Proceedings of the 25th International Thermal Conductivity/13th International Thermal Expansion Conference*, C. Uher and D.T. Morelli, eds. (Technomic, Lancaster, PA, 2000), p. 122.
- 17 A.E.C. Palmqvist, B.B. Iversen, L. Furenlid, **G.S. Nolas**, D. Bryan, S.Latturner and G.D. Stucky, 'Charge transfer and local structure in thermoelectric germanium clathrates', *Mat. Res. Soc. Symp. Proc.* **590**, 145 (2000).

- 16 B.B. Iversen, A.E.C. Palmqvist, D. Bryan, S. Lattner, G.D. Stucky, N. Blake, H. Metiu, **G.S. Nolas** and D. Cox, 'Maximum entropy method charge density distributions of novel thermoelectric clathrates', *Mater. Res. Soc. Symp. Proc.* **590**, 51 (2000).
- 15 **G.S. Nolas**, J.L. Cohn and E. Nelson, 'Transport properties of tin clathrates', *Proceedings of the Eighteenth International Conference on Thermoelectrics (IEEE catalog # 99TH8407, Piscataway, NJ, 1999)*, p. 493.
- 14 J.R. Williams, H. Sellinschegg, J. Casperson, J. Harris, C. Daniels-Hafer, D.C. Johnson, **G.S. Nolas** and E. Nelson, 'Synthesis of skutterudite superlattices by controlled crystallization of elementally modulated reactants', *Proceedings of the Eighteenth International Conference on Thermoelectrics (IEEE catalog # 99TH8407, Piscataway, NJ, 1999)*, p. 5.
- 13 H. Sellinschegg, D.C. Johnson, **G.S. Nolas** and T.M. Tritt, 'The effect of various filler atoms on the thermoelectric properties of ternary skutterudites', *Proceedings of the Eighteenth International Conference on Thermoelectrics (IEEE catalog # 99TH8407, Piscataway, NJ, 1999)*, p. 19.
- 12 H. Sellinschegg, A. Smalley, G. Yoon, D.C. Johnson, **G.S. Nolas**, M. Kaeser and T.M. Tritt, 'Synthesis of filled skutterudite compounds with varied degree of filling', *Proceedings of the Eighteenth International Conference on Thermoelectrics (IEEE catalog # 99TH8407, Piscataway, NJ, 1999)*, p. 352.
- 11 **G.S. Nolas**, 'Semiconducting clathrates: a PGEC system with potential for thermoelectric applications', *Mater. Res. Soc. Symp. Proc.* **545**, 435 (1999).
- 10 H. Sellinschegg, J.R. Williams, D.C. Johnson and **G.S. Nolas**, 'The synthesis of metastable skutterudites using superlattice reactants', *Mater. Res. Soc. Symp. Proc.* **545**, 37 (1999).
- 9 S.B. Schujman, G.A. Slack, H.C. Nguyen, **G.S. Nolas**, R.A. Young, F. Mohammed and T.M. Tritt, 'Analysis of antimony-tin-based skutterudites', *Mater. Res. Soc. Symp. Proc.* **545**, 47 (1999).
- 8 K.L. Stokes, A.C. Ehrlich and **G.S. Nolas**, 'Thermal conductivity of Fe-doped CoSb₃ skutterudites', *Mater. Res. Soc. Symp. Proc.* **545**, 339 (1999).
- 7 **G.S. Nolas**, G.A. Slack, J.L. Cohn and S.B. Schujman, 'The next generation of thermoelectric materials', *Proceedings of the Seventeenth International Conference on Thermoelectrics*, edited by K. Kuomoto (IEEE catalog # 98TH8365, Piscataway, NJ, 1998) p. 294.
- 6 H. Sellinschegg, D.C. Johnson, **G.S. Nolas**, G.A. Slack, S.B. Schujman, F. Mohammed, T.M. Tritt and E. Nelson, 'A novel approach to thermoelectrics materials research of skutterudites', *Proceedings of the Seventeenth International Conference on Thermoelectrics*, edited by K. Kuomoto (IEEE catalog # 98TH8365, Piscataway, NJ, 1998) p. 338.
- 5 **G.S. Nolas**, H.B. Lyon, J.L. Cohn, T.M. Tritt and G.A. Slack, 'Expanding the investigation of the thermoelectric properties of rare-earth-filled skutterudites', *Proceedings of the Sixteenth International Conference on Thermoelectrics*, edited by A. Heinrich and J. Schumann (IEEE catalog # 97TH8291, Piscataway, NJ, 1997) p. 321.
- 4 J.W. Sharp, **G.S. Nolas** and E.H. Volckmann, 'Studies of bulk materials for thermoelectric cooling', *Mat. Res. Soc. Symp. Proc.* **478**, 91 (1997).
- 3 **G.S. Nolas** and H.B. Lyon, 'Thermoelectrics in industry: needs, desires and potential', *Proceedings of the Third European Workshop on Thermoelectrics*, edited by D.M. Rowe (Babrow Press, Cardiff, UK, 1996) p. 65.
- 2 **G.S. Nolas** and G.A. Slack, 'New thermoelectric materials based on IrSb₃', *Proceedings of the Fourteenth International Conference on Thermoelectrics*, edited by M.V. Vedernikov, M.I. Fedorov and A.E. Kaliazin (Ioffe Physical-Technical Institute, St. Petersburg, Russia, 1995) p. 236.
- 1 T.M. Tritt, D.J. Gillespie, A.C. Ehrlich, **G.S. Nolas**, G.A. Slack and J.L. Cohn, 'Low temperature transport properties of IrSb₃', *Proceedings of the Fourteenth International Conference on Thermoelectrics*, edited by M.V. Vedernikov, M.I. Fedorov and A.E. Kaliazin (Ioffe Physical-Technical Institute, St. Petersburg, Russia, 1995) p. 240.

Conference Abstracts & Presentations (106, *not included in any category above*, first author is presenter)

- 106 A. Biswas, S. Chandra, S. Stefanoski, J. S. Blazquez, J. J. Ipus, A. Conde, M. H. Phan, V. Franco, **G.S. Nolas** and H. Srikanth, ‘Magnetocaloric effect in type-I $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$, **Invited**, International Conference on Magnetism, Barcelona, Spain, July 9, 2015.
- 105 L. M. Woods and **G.S. Nolas**, ‘Novel materials for thermoelectric applications via collaborative theoretical and experimental studies’, **Invited**, American Ceramics Society Conference, Daytona Beach, FL, January 24, 2015.
- 104 K. Wei, A.R. Khabibullin, T. Stedman, L. M. Woods and **G.S. Nolas**, ‘Multinary chalcogenides: Potential thermoelectric materials with polaronic-type conduction’, presented at the Materials Challenges in Alternative and Renewable Energy conference, Clearwater, FL, April 20, 2016.
- 103 A.R. Khabibullin, **G.S. Nolas**, and L. M. Woods, ‘Cage substitution and guest atoms in type II Sn clathrates’, presented at the Materials Challenges in Alternative and Renewable Energy conference, Clearwater, FL, April 20, 2016.
- 102 K. Wei, A. Khabibullin, L.M. Woods and **G.S. Nolas**, ‘Synthesis and physical properties of bulk and nano-structured quaternary chalcogenides’, presented at the 34th International Conference on Thermoelectrics, Dresden, Germany, July 2, 2015.
- 101 K. Wei and **G.S. Nolas**, ‘Thermoelectric properties of polymer/inorganic bulk composites’, Florida Annual Meeting (American Chemical Society Florida Section), Innisbrook, FL, May 8, 2015.
- 100 K. Wei and **G.S. Nolas**, ‘Synthesis and Characterization of Bulk and Nanostructured Materials for Thermoelectric Applications’, **Invited**, II-VI Incorporated R&D Center, Saxonburg, PA, April 21, 2015.
- 99 B. Eckert, Y. Dong and **G.S. Nolas**, ‘Quaternary Chalcogenides: Novel Materials for Thermoelectrics Applications’, USF Undergraduate Student Conference, Marshal Center, USF, April 9, 2015 (**Excellence in Undergraduate Research Award**).
- 98 Y. Dong and **G.S. Nolas**, ‘Synthesis of clathrate single crystals by spark plasma sintering’, **Invited**, to be presented at the 8th Energy Materials & Nanotechnology conference, Orlando, FL, November 22-25, 2014.
- 97 K. Wei and **G.S. Nolas**, ‘Synthesis and Characterization of Nanocrystals: A Bottom-up Approach for Energy Related Applications’, presented at the Florida Inorganic and Materials Symposium, University of Florida, Gainesville, FL, October 3, 2014
- 96 **G.S. Nolas**, ‘New Crystal Growth Techniques for Novel Group IV Materials and the Investigation of their Structure-property Relationships’, presented at the European Materials Research Society conference, Lille, France, May 29, 2014.
- 95 K. Wei and **G.S. Nolas**, ‘Low Thermal Conductivity Materials for Potential Thermoelectric Applications’, presented at the American Chemical Society Florida Annual Meeting and Exposition, Innesbrook, FL, May 9, 2013
- 94 K. Wei, Y. Dong and **G.S. Nolas**, ‘Skutterudite Derivatives: A Fundamental Investigation of New Materials and Potential for Thermoelectric Applications’, presented at the American Physical Society March Meeting, Denver, CO, April, 5, 2014.
- 93 K. Wei and **G.S. Nolas**, ‘Nano-scale Enhancement via Bottom-up Processing of Thermoelectric Materials’, presented at the Electronic Materials and Applications Conference, January 26, 2014, Orlando, FL.
- 92 S. Stefanoski and **G. S. Nolas**, ‘Crystal-growth and Structure-property Relationships of Inorganic Clathrates’, **Invited**, Seminar, Max Planck Institute for the Chemical Physics of Solids, Dresden, Germany, February 4, 2013.
- 91 S. Stefanoski and **G. S. Nolas**, ‘Inorganic Clathrates: Synthesis, Physical Properties and Potential for Thermoelectric and Magnetocaloric Applications’, **Invited**, Seminar, Institute of Physics, St. Cyril and Methodius University, February 14, 2013.

- 90 K. Wei and **G. S. Nolas**, ‘Transport Properties of Unfilled and Partially Filled Skutterudites Derivatives for Thermoelectric Applications’, presented at the Florida Inorganic and Materials Symposium, Gainesville, Florida, October 18, 2013.
- 89 W. B. Hill, Y. Dong and **G. S. Nolas**, ‘Synthesis and Characterization of Ytterbium-filled $\text{CoGe}_{1.5}\text{Se}_{1.5}$ Compositions’, American Physical Society March Meeting, Baltimore, Maryland, March 18, 2013.
- 88 M. Beekman, S. Stefanoski, **G.S. Nolas**, A.D. Ritchie, M.B. Johnson, M.A. White, ‘Influence of Na content on the structural and thermal properties of $\text{Na}_x\text{Si}_{136}$ ’, presented at the Oregon Academy of Science annual meeting, March 2, 2013, Salem, OR.
- 87 S. Stefanoski and **G.S. Nolas**, ‘Synthetic Approaches in Materials Research: Crystal Growth and Structure-property Relationships in Inorganic Clathrates’, presented at the Florida Solid-State Conference (FLASSC), October 29, 2012, Tallahassee, FL.
- 86 **G.S. Nolas**, ‘Synthesis and Characterization of Nanostructured Thermoelectric Materials Prepared by a Two-step Bottom-up Synthetic Process’, presented at the European Materials Research Society Conference, May 15, Strasbourg, France, 2012.
- 85 S. Stefanoski and **G.S. Nolas**, ‘Transport Properties of Partially-filled $\text{Na}_x\text{Si}_{136}$ Clathrates’, presented at Fall 2012 Materials Research Society Symposium, November 27, 2012, Boston, MA.
- 84 K. Wei and **G.S. Nolas**, ‘Low Temperature Transport Properties of Nanostructured Thermoelectric Materials via Bottom-up processing and SPS Densification’, presented at Fall 2012 Materials Research Society Symposium, November 28, 2012, Boston, MA.
- 83 L.M. Woods, A. Popescu and **G.S. Nolas**, ‘Thermoelectricity in Bismuth – Magnetic Fields, Nanostructures, Valleytronics and Carrier Filtering, presented at the Materials Research Society Symposium, November 26, 2012, Boston, MA.
- 82 T. Mori, J. Martin and **G.S. Nolas**, ‘Novel Routes for Control of Thermal Conductivity’, presented at the International Symposium on Ceramic Materials and Components for Energy and Environmental Applications, May 21, Dresden, Germany, 2012.
- 81 K. Wei and **G.S. Nolas**, ‘High Performance Thermoelectric Properties Via Nano-scale Enhancement of Nanocomposites Materials, presented at NANOSMAT, March 30, 2012, Tampa, FL.
- 80 K. Goodson, **G.S. Nolas** and B. Kozinsky, ‘Automotive Thermoelectric Modules and Scalable Thermo- and Electro-Mechanical Interfaces’, presented at the Thermoelectrics Applications Workshop, January 3, San Diego, California, 2011.
- 79 A. Datta, K. Wei, A. Popescu, L. Woods and **G.S. Nolas**, ‘Processing Dependence on the Thermoelectric Properties of Nanostructured Thermoelectric Materials’, presented at the Materials Research Society Conference, November 29, Boston, Massachusetts, 2011.
- 78 A. Datta, L. Woods and **G.S. Nolas**, ‘Bottom-up Strategy for Thermoelectric Nanocomposites’, **Invited**, American Physical Society March Meeting, March 22, Dallas, Texas, 2011.
- 77 A.N. Mansour, J. Martin, W. Wong-Ng and **G.S. Nolas**, ‘The Atomic Structure of Ga and Ge in Ba-Ga-(Si,Ge) Clathrate’, presented at the American Physical Society March Meeting, March 24, Dallas, Texas, 2011.
- 76 H. Srikanth, A. Chaturvedi, M.H. Phan, S. Stefanoski, **G.S. Nolas** and V. Franco, ‘Magnetocaloric Effect and Refrigerant Capacity in $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ clathrates and $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ -EuO Composites’, presented at the American Physical Society March Meeting, March 24, Dallas, Texas, 2011.
- 75 C. Higgins, E. Nenghabi, C. Myles, K. Biswas, M. Beekman, **G.S. Nolas**, ‘Structural, Electronic and Vibrational Properties of $\text{Na}_x\text{Si}_{136}$ Clathrates’, American Physical Society March Meeting, March 24, Dallas, Texas, 2011.
- 74 A. Chaturvedi, S. Stefanoski, **G.S. Nolas**, H. Srikanth and M.H. Phan, ‘Novel Clathrate-based Composite Materials for Energy-efficient Magnetic Refrigeration’, 19th International Conference on Magnetism, July 9, Bexco, Busan, South Korea, 2011.

- 73 T. Mori, J. Martin and **G.S. Nolas**, ‘Origin of Low Thermal Conductivity in Boride Compounds’, **Invited**, International Symposium on Boron, Borides and Related Materials, September 12, Istanbul, Turkey, 2011.
- 72 T. Mori, A. Prytuliak, O. Solohub, J. Martin and **G.S. Nolas**, ‘Finding Novel Routes to Intrinsically Lower Thermal Conductivity’, Novel Thermoelectric Materials and Applications Symposium, August 15, Villars-sur-Ollon, Switzerland, 2011.
- 71 L. Veremchuk, M. Baitinger, M. Beekman, **G.S. Nolas** and Y. Grin, ‘Redox Synthesis of Clathrates by SPS Technique’, International Symposium on Reactivity of Solids, June 30, Bordeaux, France, 2011.
- 70 D. Thompson, J. Paul, S. Zhu, **G.S. Nolas** and T. Tritt, ‘Thermoelectric Properties of Type I Clathrates $\text{Sr}_8\text{Na}_x\text{Ge}_{24-x}\text{Ge}_{31}$ ’, 30th International Conference on Thermoelectrics, July 20, Traverse City, Michigan, 2011.
- 69 M.A. White, A. Ritchie, M.A. MacDonald, P. Zhang, M. Johnson, M. Beekman and **G.S. Nolas**, ‘Structure, Electronic Properties and Dynamics of Si Clathrates with Na Guests’, 2011 North American Solid State Chemistry Conference, June 2, Hamilton, Ontario, Canada, 2011.
- 68 N. Crane and **G.S. Nolas**, ‘Self Assembly of Microscale Thermoelectric Devices’, Invited, NSF Civil, Mechanical and Manufacturing Innovation (CMMI) Engineering Research and Innovation Conference, January 5, 2010, Atlanta, GA.
- 67 S. Stefanoski, M. Beekman and **G. S. Nolas**, ‘Structure-property Relationships in Type I and II Si Clathrates’, presented at the fall 2010 Materials Research Society Meeting, Solid State Chemistry Symposium, December 1, 2010, Boston, MA.
- 66 S. Stefanoski and **G. S. Nolas**, ‘Transport Properties of Partially-filled Single Crystal type II Si Clathrates’ presented at the fall 2010 Materials Research Society Meeting, Thermoelectric Symposium, November 30, 2010, Boston, MA.
- 65 H. Srikanth, A. Chaturvedi, M. H. Phan, S. Stefanoski and **G. S. Nolas**, ‘Ferromagnetism and Magnetocaloric Effect in Clathrates and Composites’, 55th Magnetism and Magnetic Materials Conference, November 15, 2010, Atlanta, GA.
- 64 T. Mori, J. Martin and **G.S. Nolas**, T. Shishido and K. Nakajima, ‘Origin of Low Thermal Conductivity in Boride Compounds’, presented at the International Conference on Thermoelectrics, June 2, 2010, Shanghai, China.
- 63 H. Kirby, J. Martin, L. Chen, **G.S. Nolas**, ‘Synthesis and Characterization of Doped and Undoped PbTe Nanocomposites’, presented at the American Chemical Society Florida Annual Meeting and Exposition, May 15, 2010, Innesbrook, FL.
- 62 A. Datta, J. Paul and **G.S. Nolas**, ‘Solution Phase Synthesis in Preparing Chalcogenide Nanocomposites with Enhanced Thermoelectric Properties’, presented at the American Chemical Society Florida Annual Meeting and Exposition, May 14, 2010, Innesbrook, FL.
- 61 M.H. Phan, A. Chaturvedi, S. Stefanoski, H. Kirby, **G.S. Nolas**, H. Srikanth and V. Franco, ‘Ferromagnetism and large magnetocaloric effect in $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ ’, presented at the American Physical Society March Meeting, Portland, OR, March 16, 2010.
- 60 A. Datta, J. Paul, A. Popescu, L. Woods and **G.S. Nolas**, ‘Synthesis and transport properties of dimensional nanocomposite chalcogenides’, presented at the American Physical Society March Meeting, Portland, OR, March 17, 2010.
- 59 M. Beekman, W. Schnelle, M. Baitinger, H. Borrmann, K. Meier, A. Datta, Yu. Grin, **G.S. Nolas**, ‘Physical properties of $\text{Na}_{24}\text{Si}_{136}$ ’, presented at the American Physical Society March Meeting, Portland, OR, March 16, 2010.
- 58 A. Ritchie, P. Zhang, M.A. White, M. Beekman and **G.S. Nolas**, ‘Local structure and electronic property elucidation of sodium containing silicon clathrates through X-ray absorption studies’, 92nd Canadian Chemistry Conference, Ontario, Canada, June 1, 2009.
- 57 M.H. Phan, A. Chaturvedi, S. Stefanoski, H. Kirby, **G.S. Nolas**, H. Srikanth, ‘Ferromagnetism and large magnetocaloric effect in $\text{Eu}_8\text{Ga}_{16}\text{Ge}_{30}$ clathrates’, presented at the American Physical Society March Meeting, Pittsburg, PA, March 18, 2009.

- 56 X.N. Lin, D.L. Wang, **G.S. Nolas**, ‘Preparation and thermoelectric properties of Magnesium compounds’, presented at the American Physical Society March Meeting, Pittsburg, PA, March 17, 2009.
- 55 M. Beekman, **G.S. Nolas**, R. Hermann and Y. Grin, ‘Preparation and Fundamental Properties of Clathrate-II Intermetallic Phases: Materials with Potential for Energy Conversion Applications’, presented at the Materials Research Society, San Francisco, CA, April 14 – 17, 2009.
- 54 A. Ritchie, P. Zhang, M.A. White, M. Beekman, **G.S. Nolas**, ‘Local Structure and Electronic Property Elucidation of Sodium Containing Silicon Clathrates Through X-ray Absorption Studies’, presented at the 92nd Canadian Chemistry Conference and Exhibition, Ontario, Canada, May 30 – June 3, 2009.
- 53 R. Hyde, P. Mukherjee, M. Beekman, **G.S. Nolas**, and S. Witanachchi, ‘Growth and Characterization of Dual-Laser deposited films of Ba₈Ga₁₆Ge₃₀ for Thermoelectric Applications’, presented at the 27th International Thermoelectrics Conference, Corvallis, OR, August 4 – 7, 2008.
- 52 J. Martin, L. Wang, L. Chen and **G.S. Nolas**, ‘Enhanced thermoelectric properties of PbTe nanocomposites’, presented at the 27th International Thermoelectrics Conference, Corvallis, OR, August 7, 2008.
- 51 **G.S. Nolas**, J. Martin, S. Stefanoski, L. Wang and L. Chen, ‘Transport Properties of Lead Chalcogenide Nanocomposites’, presented at the American Physical Society March Meeting, New Orleans, LA, March 13, 2008.
- 50 R. Hyde, P. Mukherjee, M. Beekman, **G.S. Nolas**, and S. Witanachchi, ‘Growth of Stoichiometric Ba₈Ga₁₆Ge₃₀ Films by Dual-Laser Ablation and Study of Growth Dynamics by Emission Spectroscopy’, presented at the Materials Research Society conference, Boston, MA, November 28, 2007.
- 49 M. Beekman, **G.S. Nolas**, J.A. Kaduk, W. Wong-Ng, Q. Huang, and Z. Yang, ‘Synthesis and characterization of a new Na-Ge zeolite-like framework phase Na_{1-x}Ge_{3+z}’, presented at the 234th American Chemical Society, Boston, MA, August 22, 2007.
- 48 W. Wong-Ng, M. Beekman, **G. Nolas**, J.A. Kaduk, Q. Huang, Z. Yang, and A. Shapiro, ‘Crystal Chemistry and Crystallography of the Type-II Clathrate, Cs₈Na₁₆Ge_{136-x}Ag_x, and a Novel Phase, Na_{1-x}Ge_{3+z}’, presented at the American Crystallographic Association annual meeting, Salt Lake City, UT, July 21, 2007.
- 47 N. Crane, M. Nellis, **G.S. Nolas** and J. Harman, “Solid Freeform Fabrication by Directed Self Assembly”, presented at the Solid Freeform Fabrication Symposium, Austin, Texas, August 6, 2007
- 46 H. Wang, J. Yang and **G.S. Nolas**, “Low thermal conductivity bulk thermoelectrics”, presented at the Twenty-ninth International Thermal Conductivity and Seventeenth Thermal Expansion Conference, Birmingham, Alabama, June 25, 2007
- 45 J. Martin, W. Zhang, L. Chen and **G.S. Nolas**, “Synthesis and Characterization of Nanocomposite Chalcogenides”, presented at the American Physical Society, Denver, CO, March 7, 2007.
- 44 W. Wong-Ng, M. Beekman, **G.S. Nolas**, J.A. Kaduk, Q. Huang and Zhi Yang, “Crystal Chemistry and Crystallography of Novel Phase Na_{1-x}Ge_{3+z}”, Presented at the Materials Research Society Conference, Boston, MA, Nov 30 1, 2006.
- 43 S. Srinath, J. Gass, D. Rebar, G. Woods, H. Srikanth and **G.S. Nolas**, ‘Giant MCE in clathrates’, Presented at the Fiftieth Magnetism and Magnetic Materials Conference, San Jose, CA, Oct 31 – Nov. 3, 2005.
- 42 W. Gou, Y. Li, J.I. Chi, J.H. Ross, M. Beekman and **G.S. Nolas**, ‘NMR study of atomic hopping in type-I Sr-Ga-Ge clathrate’, Presented at the American Physical Society March meeting, Los Angeles, CA, March 21-25, 2005.
- 41 R.P. Hermann, V. Keppens, F. Grnadjean, O. Leupold, R. Ruffer, **G.S. Nolas** and G.J. Long, ‘A nuclear inelastic and nuclear forward scattering study of Eu₈Ga₁₆Ge₃₀’, Presented at the American Physical Society March meeting, Los Angeles, CA, March 21-25, 2005.

- 40 H.F. Rubin, M. Beekman, J. Martin, S.J. Erickson and **G.S. Nolas**, ‘Synthesis and characterization of type II clathrates’, Presented at the Southeast Section of the American Physical Society Meeting, Knoxville, TN, November 11 – 13, 2005.
- 39 J. Martin, M. Beekman, S.J. Erickson, H.F. Rubin and **G.S. Nolas**, ‘Optimization of $\text{Ba}_8\text{Ga}_{16}\text{Si}_8\text{Ge}_{22}$ type I semiconducting clathrates’, Presented at the Southeast Section of the American Physical Society Meeting, Knoxville, TN, November 11 – 13, 2005.
- 38 F. Chen, J. Shulman, Y. Xue, C.W. Chu, M. Beekman, **G.S. Nolas**, ‘Thermoelectric Properties of $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ under high pressure’, Presented at the American Physical Society March meeting, Montreal, Canada, March 22-26, 2004.
- 37 H. Mourad, M. Beekman, **G.S. Nolas**, S. Witanachchi and P. Mukherjee, ‘Growth of type I clathrate $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ thin films’, Presented at the American Physical Society March meeting, Montreal, Canada, March 22-26, 2004.
- 36 **G.S. Nolas**, J.A. Kaduk and W. Wong-Ng, ‘X-ray diffraction studies of two germanium clathrates $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ and $\text{Cs}_8\text{Na}_{16}\text{Ge}_{136}$: Promising Materials for Thermoelectric Applications’, Presented at the American Ceramics Society annual meeting, Indianapolis, Indiana, April 18 – 23, 2004.
- 35 H. Abou Mourad, M. Beekman, **G.S. Nolas** and S. Witanachchi, ‘Growth of type-I clathrates $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ thin film’, Presented at the American Physical Society march meeting in Montreal, Canada, March 22 – 26, 2004.
- 34 R.P. Hermann, F. Grandjean, P. Bonville, H. Grimm, W. Schweika, **G.S. Nolas** and G.J. Long, ‘A neutron scattering and Eu-151 Mossbauer spectral study of the guest dynamics in filled germanium clathrates’, Presented at the American Physical Society march meeting in Montreal, Canada, March 22 – 26, 2004.
- 33 F. Chen, J. Schulman, Y. Xue, C.W. Chu. M. Beekman and **G.S. Nolas**, ‘Thermoelectric properties of $\text{Sr}_8\text{Ga}_{16}\text{Ge}_{30}$ under high pressure’, Presented at the American Physical Society march meeting in Montreal, Canada, March 22 – 26, 2004.
- 32 G.A. Lamberton, T.M. Tritt, R.W. Ertenberg, M. Beekman, **G.S. Nolas**, ‘Overview of the thermoelectrics properties of Yb-filled CoSb_3 skutterudites’, National Institute of Advanced Industrial Science and Technology, Osaka, Japan, July, 25, 2003.
- 31 G. Lamberton, T.M. Tritt, R.W. Ertenberg, M. Beekman and **G.S. Nolas**, ‘Overview of the thermoelectric properties of Yb-filled skutterudites’ Presented at the American Physical Society March meeting, Austin, TX, March 3-7, 2003.
- 30 C. Kendziora, **G.S. Nolas**, D. Mandrus and B.C. Sales, ‘Raman scattering studies of filled and unfilled skutterudite and clathrates for thermoelectric applications’ Presented at the American Physical Society March meeting, Austin, TX, March 3-7, 2003.
- 29 F. Chen, K.L. Stokes, **G.S. Nolas** and C.W. Chu, ‘Pressure effects of Seebeck coefficient for tin clathrates’ Presented at the American Physical Society March meeting, Austin, TX, March 3-7, 2003.
- 28 J. Gryko, **G.S. Nolas**, and R.F. Marzke, ‘NMR, DSC and electrical conductivity studies of germanium clathrate compounds’ Presented at the American Physical Society March meeting, Austin, TX, March 3-7, 2003.
- 27 J. Gryko, **G.S. Nolas**, M. Beekman, G. Lamberton, T.M. Tritt and P.F. McMillan, ‘Thermal properties of silicon clathrate Si_{136} ’ Presented at the American Physical Society March meeting, Austin, TX, March 3-7, 2003.
- 26 M. Beekman, R.W. Ertenberg, L. Caraker and **G.S. Nolas**, ‘Synthesis and characterization of $\text{CoGe}_{1.5}\text{Se}_{1.5}$, a novel skutterudite compound’, Presented at the 126th National Meeting of the American Association of Physics Teachers, Society of Physics Students Invited Symposium, January 13-17, Austin, TX, 2003.
- 25 **G.S. Nolas**, R.W. Ertenberg, M. Beekman, L.S. Caraker, M. Kerr, G.A. Lamberton and T.M. Tritt ‘Clathrate for Thermoelectric Applications’, Presented at the Twentieth International Conference on Thermoelectrics, Long Beach, CA, August 26-29, 2002.

- 24 A.P. Wilkinson, Y. Zhang, P.L. Lee, **G.S. Nolas**, ‘Solving neighboring elemental problems in type-I clathrates using resonant diffraction’, presented at the Materials Research Society, Boston, MA, December 2-6, 2002.
- 23 R. W. Ertenberg, M. Beekman, L. Caraker, J. Yang and G. S. Nolas, ‘CoGe_{1.5}Se_{1.5}: A New Skutterudite Material’, Presented at the Southeast Regional APS meeting in Auburn, AL, October 31-November 2, 2002.
- 22 Jan Gryko, **G.S. Nolas** and R. Marzke, ‘Large knight shift in partially filled type II germanium clathrates’, presented at the American Physical Society March meeting, Indianapolis, IN, March 18, 2002.
- 21 C. Kendziora and **G.S. Nolas**, ‘Raman scattering studies of filled and unfilled Si, Ge and Sn type I and II clathrates for thermoelectric applications’, presented at the American Physical Society March meeting, Seattle, WA, March 15, 2001.
- 20 F. Chen, K.L. Stokes, **G.S. Nolas**, J. Dong and O.F. Sankey, ‘Transport properties of clathrate Cs₈A_nSn_{46-n} under high pressure’, presented at the American Physical Society March meeting, Seattle, WA, March 15, 2001.
- 19 F. Chen, K.L. Stokes and **G.S. Nolas**, ‘Transport properties of Cs₈Sn₄₄ clathrate under pressure’, presented at the American Ceramics Society, Electronics Materials Division meeting, Clemson, SC, October 10, 2000.
- 18 L.Qiu, M.A. White, J.S. Tse and **G.S. Nolas**, ‘Thermal properties of novel framework materials: Semiconductor clathrates’, presented at the Sixteenth IUPAC Conference on Chemical Thermodynamics, August 6-11, 2000, Halifax, Nova Scotia, Canada.
- 17 A.P. Wilkinson, D. Vanderveer, C. Lind, R.A. Young, S. Shastri, P. Lee and **G.S. Nolas**, ‘Very short wavelength powder diffraction studies of clathrate thermoelectrics’, presented at the Fiftieth Annual American Crystallographic Association, July 22-27, 2000, St. Paul, MN.
- 16 J.R. Williams, D.C. Johnson and **G.S. Nolas**, ‘Synthesis of new metastable skutterudite compounds using modulated elemental reactants’, American Chemical Society, March 26-30, 2000, San Francisco, CA.
- 15 H. Sellinschegg, D.C. Johnson and **G.S. Nolas**, ‘Bulk synthesis of skutterudite compounds with various filler atoms using the multilayer repeat method’, American Chemical Society, March 26-30, 2000, San Francisco, CA.
- 14 A.P. Wilkinson, D.G. VanDerveer, C. Lind, R.A. Young, S.D. Shastri, P.L. Lee, **G.S. Nolas**, ‘Disorder in clathrate thermoelectrics’, American Chemical Society, March 26-30, 2000, San Francisco, CA.
- 13 B.C. Chakoumakos, B.C. Sales, D.G. Mandrus, J.W. Sharp, **G.S. Nolas**, ‘Thermoelectric clathrates’, International Union of Crystallographic XVIII Congress, August 4-13, 1999, Glasgow, Scotland.
- 12 B.C. Chakoumakos, B.C. Sales, D.G. Mandrus, J.W. Sharp, **G.S. Nolas**, N.R. Dilley and M.B. Maple, ‘Thermal conductivity from atomic displacement parameters’, American Crystallographic Association Annual Meeting, May 22-27, 1999, Buffalo, NY.
- 11 M. Kaeser, T.M. Tritt, **G.S. Nolas**, R.T. Littleton, P. Alboni and A.L. Pope, ‘Thermoelectric properties of partially filled skutterudites’, presented at the Southeast Regional American Physical Society meeting, November 7-9, 1999, Chapel Hill, NC.
- 10 **G.S. Nolas**, J.L. Cohn, M. Kaeser, T.M. Tritt, S.B. Schujman and G.A. Slack, ‘Glass-like heat conduction in crystalline clathrate semiconductors’, presented at the March meeting of the American Physical Society, March 20-26, 1999, Atlanta, GA.
- 9 **G.S. Nolas** and C.A. Kendziora, ‘A Raman spectroscopy investigation of lanthanide filled and unfilled skutterudites’, presented at the March meeting of the American Physical Society, March 20-26, 1999, Atlanta, GA.
- 8 A. Kaeser, T.M. Tritt and **G.S. Nolas**, ‘Properties of doped Si and Ge clathrates’, presented at the March meeting of the American Physical Society, March 20-26, 1999, Atlanta, GA.

- 7 M. Fakhruddin, M.L. Wilson, T.M. Tritt and **G.S. Nolas**, 'Thermoelectric properties of filled and unfilled skutterudites', presented at the Southeast Regional American Physical Society meeting, November 9-11, 1997, Nashville, TN.
- 6 **G.S. Nolas**, 'New materials research for thermoelectric applications', presented at the Texas Regional American Physical Society meeting, October 9-11, 1997, Denton, TX.
- 5 T.M. Tritt, **G.S. Nolas**, G.A. Slack, A.C. Ehrlich, D.J. Gillespie and J.L. Cohn, 'Low temperature transport properties of the filled and unfilled IrSb₃ skutterudite system', presented at the March meeting of the American Physical Society, March 19-23, 1996, St. Louis, MO.
- 4 T.M. Tritt, A.C. Ehrlich, D.J. Gillespie, **G.S. Nolas** and G.A. Slack, 'Thermal and electrical transport properties of porous IrSb₃', presented at the March meeting of the American Physical Society, March 20-24, 1995, San Diego, CA.
- 3 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, 'Site selective electronic Raman excitation study of the 4f5d transitions in trivalent cerium-activated yttria', presented at the Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (CLEO/IQEC '94), May 8-13, 1994, Anaheim, CA.
- 2 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, 'Electronic Raman scattering in Ce³⁺:Sc₂O₃', presented at the March meeting of the American Physical Society, March 21-25, 1994, Pittsburgh, PA.
- 1 **G.S. Nolas**, V.G. Tsoukala, S.K. Gayen and G.A. Slack, 'Resonance enhancement and site selectivity of electronic Raman transitions in trivalent cerium-doped yttria', presented at the International Conference on Luminescence (ICL'93), August 14-18, 1993, Storrs, CN.