

JOHN A. JASZCZAK

Department of Physics
Michigan Technological University
1400 Townsend Dr.
Houghton, MI 49931-1295

Phone: (906) 487-2255 Fax: (906) 487-2933

Web site: www.phy.mtu.edu/~jaszczak E-mail: jaszczak@mtu.edu

Professor Jaszczak's interest in minerals dates to his early childhood and grew into his desire to become a scientist. His work with the A. E. Seaman Mineral Museum includes are and development of the collection database, advice with collection management, mineralogical research, outreach, and assistance with the museum's membership society. He has served the museum as adjunct curator since 1992, and for many years chaired the board of the Seaman Mineral Museum Society. His current mineralogical research interests focus on graphite, unusual mineral growth forms, and the minerals of the Merelani tanzanite mines in Tanzania. He also enjoys mineral specimen macro- and micro-photography. His work has been featured in numerous mineralogical publications and has received several awards.

As a professor of physics, Dr. Jaszczak's research interests have included various aspects phase transitions and dynamics at crystal surfaces and properties of materials interfaces using computer simulation. Most recently he has been leading computer-simulation studies of single-electron-transport devices using computer simulation, in collaboration with his graduate students and colleagues involved in the experimental aspects of the study. Dr. Jaszczak teaches physics courses at all levels, including large introductory classes in which he enjoys doing demonstrations and engaging students in the classroom using physics-education-research-based pedagogies. Since 2003 he has been working to advance nanotechnology education at high-school and undergraduate levels. He has been a member of the university's Academy of Teaching Excellence since 2012.

In his recently completed term as Associate Dean, Dr. Jaszczak worked with faculty in the college, as well as on the Assessment and General Education Councils of the university to improve student learning through the general education and degree programs, and to develop evaluation and reporting processes to support such improvements.

Professional Experience

Michigan Technological University Houghton, Michigan	Professor Associate Professor Assistant Professor Department of Physics	9/2006-present 9/1997-present 9/1991-8/1997
	Associate Dean for Undergraduate Education College of Arts and Sciences	8/2013-7/2016
	Associate Director for Education and Outreach, MTU Multiscale Technologies Institute	4/2006-present
	Affiliated Professor Materials Science and Engineering	6/2006-present
	Affiliated Professor Cognitive and Learning Sciences Department	10/2004-present
	Adjunct Curator Interim Curator A. E. Seaman Mineral Museum	8/1992-present 6/2013-9/2013
United States Air Force Office of Scientific Research	Summer Faculty Research Associate	7/1/93-8/25/93
Argonne National Laboratory	Postdoctoral Appointee	6/1989-8/1991

Education

- Ph.D. (Physics). The Ohio State University, 1989. Advisor: Dr. W. F. Saam.
Dissertation: "Facets and Roughening in Crystals and Quasicrystals."
M.S. (Physics). The Ohio State University, 1985.
B.S. *with Highest Honors* (Physics), Case Western Reserve University, 1983.

Honors and Awards

- Michigan Technological University *Academy of Teaching Excellence*. Inducted 2012.
Michigan Council of President's *Distinguished Professor of the Year* nominee 2010.
Michigan Technological University *2007 Faculty Distinguished Service Award*.
Research Associate (Geology) in the Research & Collections Division, New York State Museum. July 2002 - December 31, 2005.
2000 Kunz Prize Competition for best paper on aspects of northeastern U.S. mineralogy: 1st Place.
Four "First Place" trophies and two "Best in Show" awards from four regional mineral shows for an extensive educational exhibit on "Crystal Symmetry," displayed throughout 1987.
1996 Kunz Prize Competition for best paper on aspects of northeastern U.S. mineralogy: 3rd Place.
Finalist for Distinguished Teacher of the Year award at MTU, 1993-1994.
Ohio State University Presidential Fellowship, 1988-1989.
Case Alumni Association Scholarship, 1981, 1982.
The Merck Index Award for Excellence in Chemistry, 1981.
Tau Beta Pi (Engineering Honor Society), 1981.
Valedictorian (in class of 670). Parma Senior High School, 1979.

Synergistic Activities:

1. Nanotechnology Education:
 - a. Faculty advisor (1/2008 to 12/2013) for Nanotech Innovations Enterprise, which started with NSF support to establish a student-run corporation to provide undergraduates with goal-oriented, hands-on entrepreneurial and educational experiences in research, development, marketing and high-school outreach related to nanotechnology products and services. (NSF EEC-0741490 1/1/2008 – 12/31/2010, \$200k, with M. Raber, P. Bergstrom, M. Bennett, and A. Alaraje); Co-PI "High School Enterprise" Co-PI for NSF-funded 3-year ITEST project (~\$1.5M) to initiate enterprise programs in high schools as a means of increasing interest and excellence in STEM disciplines (PI: J.-C. Kampe).
 - b. "NUE: Undergraduate Exploration of Nano-Science, Applications and Societal Implications at Michigan Tech" PI for NSF-funded project (~\$100k) in 2003-2005 leading a group of approximately 20 faculty participating in introducing various aspects of nano-scale science, technology and implications into Michigan Tech's undergraduate curriculum. (With G. Caneba, E. Aifantis, B. Seely, M. Miller.)
2. Associate Director for Education and Outreach, MTU Multiscale Technologies Institute.
 - a. Promote and coordinate educational and outreach activities for the institute, which seeks to develop and integrate technologies from the nanoscale on up.
 - b. Co-initiated and advise the interdisciplinary minor in "Nanoscale Science and Engineering (Nanotechnology)", and the Graduate Certificate in Nanotechnology.

- c. Present lectures and workshops, "Exploring Nanotechnology through Carbon Nanotubes," "Introduction to Nanotechnology and Scanning Tunneling Microscopy" to local high school students (including Women in Engineering; Minorities in Engineering) and MTU freshmen engineering majors, and high school STEM teachers.
3. Associate Dean for Undergraduate Education, College of Sciences and Arts (8/2013 to 7/2016). Serve on the University Assessment and General Education Councils to help design and implement a new university-wide student-learning-focused assessment program and a new general education program.
4. Led development of the following programs at Michigan Tech: Engineering Physics Ph.D. (started in 2002; committee chair 2002-2013; assisted in transitioning this program to Applied Physics Ph.D. in 2015-16), B.A. in Physics, and B. A. in Physics with Concentration in Secondary Education (2012). Currently serving as Physics Undergraduate Studies Committee chair.
5. As adjunct curator of the A. E. Seaman Mineral Museum, the Mineralogical Museum of the State of Michigan, help to develop the academic role of the museum for the Michigan Tech community and surrounding communities. As chair of the Seaman Mineral Museum Society, help to promote the museum nationally and internationally and promote the museum's mission. For this work, received the Michigan Technological University *2007 Faculty Distinguished Service Award*.
6. Work with Michigan Tech Cognitive and Learning Sciences Department to (i) develop new teaching certification programs in Integrated Science and in Physical Science (ii) prepare review materials for review of Physics secondary education certification program. Teach workshops for teachers (Educator's Science & Mathematics Institute) and on exploring nanotechnology (ASM Materials Camp). Currently serve as academic advisor for physics majors seeking secondary education certification in Michigan.

Publications

"Faceting in bond-oriented glasses and quasicrystals." T. L. Ho, J. A. Jaszczak, Y. H. Li and W. F. Saam, *Physical Review Letters* **59**, 1116-1119 (1987).

"Roughening and facet formation in the presence of subharmonic potentials." J. A. Jaszczak and W. F. Saam, *Physical Review B* **37**, 7619-7624 (1988).

"Early illustration of cinnabar crystals." J. A. Jaszczak. *Matrix: A Journal of the History of Minerals*, **1**, 74- (1988).

"Ideal quasicrystal facets: A Monte Carlo study," J. A. Jaszczak, W. F. Saam and B. Yang, *Physical Review B* **39**, 9289-9295 (1989).

"Faceting in bond oriented systems with icosahedral and decagonal symmetry." T. L. Ho, Y. H. Li, W. F. Saam and J. A. Jaszczak. *Physical Review B* **39**, 10614-10626 (1989).

"Numerical study of interfacial properties of two-dimensional aperiodic systems." B. Yang, W. F. Saam and J. A. Jaszczak. *Physical Review B* **40**, 7167-7178 (1989).

"Quasicrystals." J. A. Jaszczak. In the Program of the 16th Rochester Mineralogical Symposium, Rochester, New York, April, 1989.

- "Growth and dynamical roughening of ideal quasicrystal facets." J. A. Jaszczak, W. F. Saam and B. Yang, *Physical Review B* **41**, 6864-6869 (1990).
- "Role of coherency in the elastic behavior of composition-modulated superlattices." J. A. Jaszczak, S. R. Phillpot and D. Wolf, *Journal of Applied Physics* **68**, 4573-4580, (1990).
- "On the elastic behavior of composition-modulated superlattices," J. A. Jaszczak and D. Wolf, *Journal of Materials Research* **6**, 1207-1218 (1991).
- "Calculation of elastic constants from a replica Monte Carlo simulation." J. M. Rickman and J. A. Jaszczak. *Physical Review B* **43**, 13285 (1991).
- "Temperature Dependence of the Elastic Behavior of Structurally Disordered Metallic Superlattices." J. A. Jaszczak and D. Wolf. In *Structure/Property Relationships for Metal/Metal Interfaces*, edited by A. D. Romig, Jr., D. E. Fowler, and P. D. Bristowe. MRS Symp. Proc. vol. 229 (Materials Research Society, Pittsburgh, 1991) p. 85-90.
- "Graphite from Crestmore, Riverside County, California." J. A. Jaszczak. *Mineralogical Record* **22**, 427-432 (1991).
- "Growth Twinning in Graphite from the Crestmore and Jensen Quarries, Riverside Co., California." J. A. Jaszczak. In the Program of the 18th Rochester Mineralogical Symposium, Rochester, New York, April, 1991, and *Rocks and Minerals* **67**, 114 (1992).
- "Pyrite Bars Resulting from Epitaxial Overgrowth on Marcasite Whiskers." R. P. Richards, E. L. Clopton, and J. A. Jaszczak. In the Program of the 18th Rochester Mineralogical Symposium, Rochester, New York, April, 1991, and *Rocks and Minerals*, **67**, 118 (1992).
- "Computer simulation of the anomalous elastic behavior of interface materials." D. Wolf and J. A. Jaszczak. In *Materials Interfaces: Atomic-Level Structure and Properties*, edited by D. Wolf and S. Yip. (Chapman and Hall, London, 1992) pp. 365-406.
- "Role of interface dislocations and surface steps in the work of adhesion." D. Wolf and J. A. Jaszczak. In *Materials Interfaces: Atomic-Level Structure and Properties*, edited by D. Wolf and S. Yip. (Chapman and Hall, London, 1992) pp. 662-690.
- "Thermoelastic behavior of structurally disordered interface materials: Homogeneous vs. inhomogeneous effects." J. A. Jaszczak and D. Wolf, *Physical Review B* **46**, 2473-2480 (1992).
- "On the Relation Between Sliding and Migration for High-Angle Grain Boundaries." D. Wolf, S. R. Phillpot, J. A. Jaszczak, and S. Yip, *Materials Science Forum*, **94-96** pt. 2, 487-494 (1992).
- "On the interaction between steps in vicinal fcc surfaces: 1. Steps along $\langle 001 \rangle$." D. Wolf and J. A. Jaszczak. *Surface Science* **277**, 301-322 (1992).
- "Quasicrystals: Novel forms of solid matter." J. A. Jaszczak. *Mineralogical Record* **25** (1994) 85-93.
- "On the natural occurrence of spherical graphite." J. A. Jaszczak. In the Program of the 20th Rochester Mineralogical Symposium, Rochester, New York, April, 1993; and *Rocks and Minerals* **69**, 117-118 (1994).
- "Pyrite and Marcasite from Northern Illinois." R. P. Richards, E. L. Clopton, and J. A. Jaszczak. *Mineralogical Record* **26**, 129-138 (1995).

- "Tailored Elastic Behavior of Multilayers Through Controlled Interface Structure." D. Wolf and J. A. Jaszczak. *Journal of Computer-Aided Materials Design*. **1**, 111-148 (1993).
- "Famous graphite crystals from Sterling Hill, New Jersey." J. A. Jaszczak. *The Picking Table* **35**(2), 6-11 (1994).
- "Graphite: Flat, Fibrous and Spherical." J. A. Jaszczak. In, *Mesomolecules: From Molecules to Materials*, edited by G. D. Mendenhall, J. Liebman and A. Greenberg (Chapman & Hall, New York, 1995). pp. 161-180.
- "Monte Carlo Simulation of Dislocation-Nucleated Etching of Silicon {111} Surfaces." D. L. Woodraska*, J. A. LaCosse†, and J. A. Jaszczak In *Modeling and Simulation of Thin-Film Processing*, edited by D. J. Srolovitz, C.A. Volkert, M. J. Fluss, and R. J. Kee. MRS Symp. Proc. **389** (Materials Research Society, Pittsburgh, 1995) p. 209-214.
- "Zincite Comes to Light." J. A. Jaszczak and S. J. Dyl II, *The Picking Table* **36**(2), 18-21 (1995); and *Matrix: A Journal of the History of Minerals*, **4**, 55-58 (1995).
- "Crystallography." In, *Introduction to 3-D Spatial Visualization* by B. G. Baartmans and S. A. Sorby. (Prentice Hall, Englewood Cliffs, NJ, 1995) pp. 139-146; *Instructor's Resource Manual: Introduction to 3-D Spatial Visualization* by B. G. Baartmans and S. A. Sorby. (Prentice Hall, Englewood Cliffs, NJ, 1995) pp. 124-127.
- "Morphology of graphite from Pargas (Parainen), Finland." J. A. Jaszczak. In the program of the 23rd Rochester Mineralogical Symposium, Rochester, New York, April 18-21, 1996; *Rocks and Minerals* **72**, 125-126 (1997); and "More unusual graphite." [letter to the editor] *Rocks and Minerals* **72**, 297 (1997).
- "A Monte Carlo Simulation Method for {111} Surfaces of Silicon and Other Diamond-Cubic Materials." D. L. Woodraska* and J. A. Jaszczak. *Surface Science* **374**, 319-332 (1997).
- "Roughening and Preroughening of Diamond-Cubic {111} Surfaces." D. L. Woodraska* and J. A. Jaszczak. *Physical Review Letters* **78**, 258-261 (1997).
- "Unusual graphite crystals from Lime Crest Quarry, Sparta, New Jersey." J. A. Jaszczak. In: George F. Kunz Competition Papers 1996 (New York, New York Mineralogical Club, 1996) pp. 50-57 [3rd place]; and *Rocks and Minerals*. **72**, 330-334 (1997); *Rocks & Minerals* edition reprinted in *The Picking Table: Journal of the Franklin-Ogdensburg Mineralogical Society, Inc.* **39**(1), 20-24 (1998).
- "Roughening and Preroughening of Diamond-Cubic {111} Surfaces." D. L. Woodraska* and J. A. Jaszczak. *MRS Symposium Proceedings* **440**, 71-76 (1997).
- "The Many Faces of Copper Crystals in the Lake Superior Copper District", J. A. Jaszczak. In: *"Red Gold & Tarnished Silver": Mines and Minerals of the Lake Superior Copper District* (Copper Country Rock & Mineral Club, Houghton, MI, 1998) pp. 21-23, 25-30. Updated and revised: *"Red Gold & Tarnished Silver": Mines and Minerals of the Lake Superior Copper District* (Copper Country Rock & Mineral Club, Houghton, MI, 2001) pp. 25-33.
- "Disclinations in unusual graphite crystals from anorthosites of Ukraine." V. N. Kvasnitsa, V. G. Yatsenko and J. A. Jaszczak. *Canadian Mineralogist* **37**(4) (1999), 951-960.
- "A new find of spherical graphite from Sterling Hill, New Jersey." G. A. Hanna and J. A. Jaszczak. *The Picking Table* **40** (1999) 27-30.

"Multiple length scale growth spirals on natural graphite (001) surfaces" K. McCall, J. Rakovan, and J. A. Jaszczak. Geological Society of America, 1999 annual meeting. *Abstracts with Programs* – **31**(7) (1999) 169.

"Spherical and triskelial graphite from Gooderham, Ontario, Canada." J. A. Jaszczak and G. W. Robinson. Proceedings of the technical session of the 23rd Rochester Mineralogical Symposium, Rochester, New York, April 16, 1999. pp. 11-12; and: *Rocks & Minerals* **75** (2000) 172-173.

"Palache's 'Contributions to the mineralogy of Sterling Hill, New Jersey': The 900-foot level revisited." J. A. Jaszczak. *Matrix: A Journal of the History of Minerals* **8**(3), 137-149 (2000). (1st place Kunz Prize)

"Palache's 'Contributions to the mineralogy of Sterling Hill, New Jersey': The 900-foot level revisited." J. A. Jaszczak. *The Picking Table* **42**(1), 6-15 (2001). (Slightly different printing than in *Matrix*).

Review of: *Typomorphism of Diamond Microcrystals* by Victor N. Kvasnitsa, Nikolai N. Zintchouk, and Vasilii I. Koptil'. NEDRA, Moscow. 1999. J. A. Jaszczak. Review published in: *Rocks and Minerals* **76**, 422-423 (2001).

"Growth spirals on graphite from the Trotter Mine dump, Franklin, New Jersey." J. A. Jaszczak and J. Rakovan. *The Picking Table* **43**(2), 11-13 (2002).

"Multiple length scale growth spirals on metamorphic graphite {001} surfaces studied by atomic force microscopy." J. Rakovan and J. A. Jaszczak. *American Mineralogist* **87**, 17-24 (2002).

"Graphite with growth spirals from Arises River Marbles, Wlotzkas Baken, western Namibia." J. Rakovan and J. A. Jaszczak. *Mineralogical Record* **33**, 79 (2002).

"New occurrences of manganotantalite from Alto do Giz area, Equador, Rio Grande do Norte, Brazil." G. W. Robinson, J. A. Jaszczak, R. R. Wegner, and O. P. Mills. *Mineralogical Record* **33**, 505-510, 521 (2002).

"A natural occurrence of graphite cones." J. A. Jaszczak and G. W. Robinson. Proceedings of the technical session of the 29th Rochester Mineralogical Symposium, Rochester, New York. April 19, 2002. pp. 9-10.

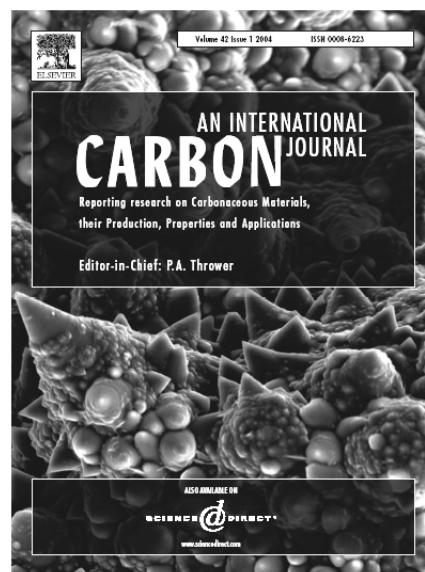
"Naturally occurring graphite cones." J. A. Jaszczak, G. W. Robinson, S. Dimovski and Y. Gogotsi. *Carbon* **41**, 2085-2092 (2003). Cover photo appeared on all issues of *Carbon* published in 2004 and 2005.

"Monte Carlo simulations of surface phase transitions in a modulated layered structure." D. Gao* and J. A. Jaszczak. *Physical Review B* **67**, 155420 1-7 (2003).

"Naturally occurring cones and tubes of graphite." S. Dimovski, J. A. Jaszczak, G. W. Robinson, Y. Gogotsi, and S. A. Hackney. CARBON2004 proceedings, July 11-16, 2004. Providence, Rhode Island. (OmniPress CD).

"Mechanism for Spatial Organization in Quantum Dot Self-Assembly." D. Gao*, A. S. Kaczynski†, and J. A. Jaszczak. *Applied Physics Letters* **86**, 133102 1-3 (2005). Also published in *Virtual Journal of Nanoscale Science & Technology* (<http://www.vjnano.org>) **11**(13), April 4, 2005.

"Kinetic Monte Carlo Simulation of Defect-Mediated Organization in Quantum Dot Self-Assembly." D. Gao*, A. Kaczynski†, and J. A. Jaszczak. Technical Proceedings of the 2005 Nanotechnology Conference and Trade Show, Nanotech, 2005. Anaheim, CA. May 8-12, 2005.



- "Landau level splitting in graphene at high magnetic fields." Y. Zhang, Z. Jiang, J. P. Small, M. S. Purewal, Y. -W. Tan, M. Fazlollahi, J. D. Chudow, J. A. Jaszczak, H. L. Stormer, and P. Kim. *Physical Review Letters* **96**, 136806 (2006).
- "Micro- and nano-scale graphite cones and tubes from Hackman Valley, Kola Peninsula, Russia." J. A. Jaszczak, S. Dimovski, S. A. Hackney, G. W. Robinson, P. Bosio, and Y. Gogotsi. *Canadian Mineralogist* **45**, 379-389 (2007).
- "Planting Seeds: Introducing Nanotechnology Education into Engineering Curricula." J. A. Jaszczak and B. E. Seely. *Education in Nanoscience and Engineering*, edited by R. Carpenter, S. Seal, N. Healy, N. Shinn, W. Braue (Mater. Res. Soc. Symp. Proc. **931E**, Warrendale, PA, 2006), KK01-08.
- "Nano- and micro-scale graphite cones and tubes from Hackman Valley, Khibiny Massif, Kola Peninsula, Russia." J. A. Jaszczak, S. A. Hackney, and S. Dimovski. Proceedings of the technical session of the 32nd Rochester Mineralogical Symposium, Rochester, New York, April 15, 2005. *Rocks and Minerals* **82**, 238-240 (2007).
- "Developing Nano Education at a Technological University: Science, Technology and Societal Implications of Nano." J. A. Jaszczak and B. E. Seely. In: *Nanoscale Science and Engineering Education: Issues, Trends and Future Directions*, A. E. Sweeney and S. Seal, Eds. American Scientific Publishers (2008) 591-619.
- "Greenockite and associated uranium-vanadium minerals from the Huron River Uranium Prospect, Baraga County, Michigan." S. M. Carlson, G. W. Robinson, M. J. Elder, J. A. Jaszczak, and T. J. Bornhorst. *Rocks and Minerals* **82**, 298-308 (2007).
- "Giant intrinsic carrier mobilities in graphene and its bilayer." S. V. Morozov, K. S. Novoselov, M. I. Katsnelson, F. Schedin, D. Elias, J. A. Jaszczak, and A. K. Geim. *Physical Review Letters* **100**, 016602 (2008).
- "Graphene in extremely high magnetic fields." Z. Jiang, Y. Zhang, Tan, Y. -W., J. A. Jaszczak, H. L. Stormer, P. Kim. *International Journal of Modern Physics B* **21**, 8-9 (2008).
- "Nanotech Innovations: Nanotechnology Enterprise at Michigan Technological University." J. A. Jaszczak, M. Raber, M. Bennett, N. Alaraje, P. L. Bergstrom, AIChE Annual Meeting Proceedings. November 20, 2008. Philadelphia, PA. (CD ROM).
- "The graphites of New York: Scientific and aesthetic surprises." J. A. Jaszczak, S. C. Chamberlain and G. W. Robinson. *Rocks & Minerals* **84**, 502-519 (2009).
- "Searching for graphite in "God's Own Country". J. A. Jaszczak. *Mineral News* **25**(12), 12, 4-6 (2009).
- "Relationship between structure, morphology, and carbon isotopic composition of graphite in marbles: Implications for calcite-graphite carbon isotope thermometry." M. Satish-Kumar, J. A. Jaszczak, T. Hamamatsu, and H. Wada. *American Mineralogist* **96**, 470-485 (2011).
- "Spirals, Scales, Cones, And Lamellae: The Strange World of Graphite Overgrowths from The Trotter Mine Dump, Franklin, New Jersey." J. A. Jaszczak. *The Picking Table* **53**(2), 17-23 (2012).
- "Word to the Wise: Raman spectroscopy in the identification and study of minerals." J. A. Jaszczak. *Rocks & Minerals* **88**, 184-189 (2013).

“Miracle at Merelani: A remarkable occurrence of graphite, diopside and associated minerals from the Karo Pit, Block D, Merelani Hills, Arusha Region, Tanzania.” J. A. Jaszczak, and D. Trinchillo. *Rocks & Minerals* **88**, 154-165 (2013).

“Fluorapatite from a remarkable occurrence of graphite and associated minerals, Karo Pit, Block D, Merelani Hills, Arusha Region, Tanzania.” J. M. Long, J. Rakovan, J. A. Jaszczak, A. J. Sommer, and R. R. Anczkiewicz, *Rocks & Minerals* **88**, 179-183 (2013).

“Stellate surface features on graphite from Crestmore, California, and Amity, New York.” J. A. Jaszczak. *Mineral News* **28**(11), 1-4, 10 (2012).

“Nanotech Innovations Enterprise at Michigan Technological University.” J. A. Jaszczak, E. M. Bouta, and M. B. Raber. *Journal of Nano Education* **5**, 27-43 (2013).

“Room Temperature Tunneling Behaviors of Boron Nitride Nanotubes Functionalized with Gold Quantum Dots.” C. H. Lee, M. A. Savaikar,* J. S. Wang, B. Y. Hao, D. Y. Zhang, D. Banyai,* J. A. Jaszczak, and Y. K. Yap. *Advanced Materials* **25**, 4544-4548 (2013). DOI: 10.1002/adma.201301339.

“Simulation of charge transport in multi-island tunneling devices: Application to disordered one-dimensional systems at low and high bias.” M. A. Savaikar,* D. Banyai,* P. L. Bergstrom, and J. A. Jaszczak. *Journal of Applied Physics* **114**, 114504-1-12 (2013).

“Optically sector zoned (star) diamonds from Zimbabwe.” J. Rakovan, E. Gaillou, J. E. Post, J. A. Jaszczak, J. Betts. *Rocks and Minerals* **89** 173-178 (2014).

“Plasma synthesis of hexagonal-pyramidal graphite hillocks.” X. Glad, L. de Poucques, J. A. Jaszczak, M. Belmahi, J. Ghanbaja, and J. Bougdira. *Carbon* **76**, 330-340 (2014).

“Spectacular sulfides from the Merelani tanzanite deposit, Lelatema Mountains, Manyara Region, Tanzania.” S. Harrison, J. A. Jaszczak, M. Keim, M. Rumsey, and M. Wise. *The Mineralogical Record* **45**, 553-570 (2014).

“Simulation of charge transport in disordered assemblies of metallic nano-islands: Application to boron-nitride nanotubes functionalized with gold quantum dots.” J. A. Jaszczak, M. A. Savaikar*, D. R. Banyai*, B. Hao, D. Zhang, P. L. Bergstrom, A.-P. Li, J.-C. Idrobo, and Y. K. Yap. MRS Symposium Proceedings Spring (2014).

“Viewpoint: Watching Quasicrystals Grow.” J. A. Jaszczak. *Physics* **8**, 78 (2015).
URL: <http://link.aps.org/doi/10.1103/Physics.8.78>

“Merelani: Tansanit und Seltene Sammlermineralien.” S. Weiß, J. A. Jaszczak, S. Harrison, J. Hintze, and W. Radl. *Lapis* **40**, 34-63, 90 (2015).

“New Flexible Channels for Room Temperature Tunneling Field Effect Transistors”. B. Hao, A. Asthana, P. K. Hazaveh*, P. Bergstrom, D. Banyai*, M. Savaikar*, John A. Jaszczak, and Y. K. Yap. *Scientific Reports* **6**, 20293 (2016).

“Physical Mechanisms Leading to the Coulomb Blockade and Coulomb Staircase Structures in Strongly Coupled Multi-Island Single-Electron Devices.” M. A. Savaikar*, P. L. Bergstrom, John A. Jaszczak. *ECS Journal of Solid State Science and Technology* **5**, Q199-Q103, (2016).

“The Magnificent Mineralogy of Diamond.” J. A. Jaszczak and K. Dunnell. In: *Diamond- The Ultimate Gemstone*. Lithographie, LLC. (in press).

New mineral description: IMA No. 2016-042 $\text{Pb}_4\text{Mo}_4\text{VSbS}_{15}$, Merelani Region, Tanzania. M.S. Rumsey, J.A. Jaszczak, L. Bindi, S.A. Hackney, M.A. Wise, C. Stanley and J. Spratt. *CNMNC Newsletter* No. 33, October 2016 (in press); *Mineralogical Magazine*, 80 (in press).

* Graduate student advisee.

† Undergraduate student advisee.