


# Andrey Gunawan


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## EDUCATION

**Ph.D. Mechanical Engineering**, Arizona State University (ASU), Tempe, AZ  2015  
Thesis committee: Dr. Patrick E. Phelan (Advisor)  
Dr. Daniel A. Buttry, Dr. Vladimiro Mujica, Dr. Candace K. Chan, and Dr. Robert Y. Wang

**M.S. Aerospace Engineering**, University of Southern California, Los Angeles, CA  2010

**B.S. Aeronautics and Astronautics**, Institut Teknologi Bandung (ITB), Bandung, Indonesia  2008

## PROFESSIONAL EXPERIENCE

**Research Engineer II, Georgia Institute of Technology** Jan 2016 – present



Senior personnel at Scalable Thermal Energy Engineering Laboratory, currently co-leading \$2.2 million U.S. Department of Energy (DOE) Solar Energy Technologies Office Gen3CSP project on researching high temperature (>700 °C) thermophysical property measurements of heat transfer media and containment materials that will ultimately provide the necessary data to advance high-temperature concentrating solar power (CSP) systems. [\[more info\]](#)

## FUNDED PROJECTS


**Co-Principal Investigator**, “Thermophysical Property Measurement of Heat Transfer Media and Containment Materials,” supported by **DOE Solar Energy Technologies Office (\$2,184,934)**, 08/15/18 – 08/15/23

Senior Personnel, “Sodium Ion Expansion Power Block for Distributed CSP,” supported by DOE SunShot (\$2,348,780), 10/01/15 – 06/30/19


**Principal Investigator**, “Thermogalvanic Waste Heat Recovery in Automobiles,” supported by Arizona State University Graduate Research Support Program (\$1,600), 11/15/14 – 11/15/15

**Principal Investigator**, “Thermogalvanic Waste Heat Recovery in Transportation Energy Systems,” supported by The Electrochemical Society (ECS) (\$5,000), 04/15/14 – 08/15/14

## NOTABLE AWARDS AND HONORS

Best Paper Award (2<sup>nd</sup> Prize), ASME Power & Energy 2018 Conference  2018

Best Paper Award (1<sup>st</sup> Prize), ASME Power & Energy 2015 Conference  2015

Joseph W. Richards Summer Fellowship, The Electrochemical Society  2014

Link Foundation Energy Fellowship (Honorable Mention), Link Foundation  2014

## JOURNAL PUBLICATIONS

Total Number of Citations: 703

Google Scholar Profile: <https://scholar.google.com/citations?user=FOT749AAAAAJ&hl=en>

1. A. Gunawan, R.A. Simmons, M.W. Haynes, D. Moreno, A.K. Menon, M.C. Hatzell, S.K. Yee, *Techno-economics of Cogeneration Approaches for Combined Power and Desalination from Concentrated Solar Power*, **ASME J. Sol. Energy Eng.**, 141(2), 021004, 2018

2. A. Limia, J.M. Ha, P. Kottke, [A. Gunawan](#), A.G. Fedorov, S.W. Lee, S.K. Yee, *A dual-stage sodium thermal electrochemical converter (Na-TEC)*, **J. Power Sources**, 371, pp. 217-224, 2017
3. [A. Gunawan](#), H. Li, C.-H. Lin, D.A. Buttry, V. Mujica, R.A. Taylor, R.S. Prasher, P.E. Phelan, *The Amplifying Effect of Natural Convection on Power Generation of Thermogalvanic Cells*, **Int. J. Heat Mass Transf.**, 78, pp. 423-434, 2014
4. R.A. Taylor, J.K. Wong, S. Baek, Y. Hewakuruppu, X. Jiang, C. Chen, [A. Gunawan](#), *Nanoparticle-Assisted Heating Utilizing a Low-Cost White Light Source*, **ASME J. Nanotechnol. Eng. Med.**, 4, pp. 040903, 2014
5. S. Lee, P.E. Phelan, L. Dai, R. Prasher, [A. Gunawan](#), R.A. Taylor, *Experimental Investigation of the Latent Heat of Vaporization in Aqueous Nanofluids*, **Appl. Phys. Lett.**, 104, pp. 151908, 2014
6. [A. Gunawan](#), C.-H. Lin, D.A. Buttry, V. Mujica, R.A. Taylor, R.S. Prasher, P.E. Phelan, *Liquid Thermoelectrics: Review of Recent and Limited New Data of Thermogalvanic Cell Experiments*, **Nanoscale Microscale Thermophys. Eng.**, 17, pp. 304-323, 2013 ([Cover Article](#); [Top 4 'Most cited articles'](#))
7. R.A. Taylor, S. Coulombe, T.P. Otanicar, P.E. Phelan, [A. Gunawan](#), W. Lv, G. Rosengarten, R.S. Prasher, H. Tyagi, *Small Particle, Big Impacts: A Review of the Diverse Applications of Nanofluids*, **Appl. Phys. Rev.** (was still a part of J. Appl. Phys.), 113, pp. 011301, 2013 ([Cover Article](#))
8. R.A. Taylor, P.E. Phelan, R.J. Adrian, [A. Gunawan](#), T.P. Otanicar, *Characterization of Light-Induced, Volumetric Steam Generator in Nanofluids*, **Int. J. Therm. Sci.**, 56, pp.1-11, 2012

## SELECTED PROFESSIONAL SERVICE

Journal reviewer for **Joule**, *Journal of Power Sources*, *International Journal of Hydrogen Energy*, *International Journal of Thermal Sciences*, *International Journal of Heat and Mass Transfer*, *ASME Journal of Electrochemical Energy Conversion and Storage*, *ASME Journal of Energy Resources Technology*, *Material Express*, and *Entropy*

### Review Panels for National Science Foundation – SBIR/STTR

Session Organizer for ‘Manufacturing Methods for Electrochemical Energy Conversion and Storage’ Track at the ASME 2018 Power and Energy Conference & Exhibition, Lake Buena Vista, FL

Session Organizer for ‘Student Competition’ Tracks at the ASME 2016, 2017, and 2018 Power and Energy Conferences & Exhibitions

Referee for The Electrochemical Society – Georgia Local Conference Poster Competition (Apr 27<sup>th</sup>, 2018)

Reviewer for Georgia Tech President's Undergraduate Research Awards (PURA) applications (Fall 2017)

Judge for Georgia Tech Spring 2016 Capstone Design Expo (Apr 26<sup>th</sup>, 2016) and Georgia Tech Career Research and Innovation Development Conference (CRIDC) Poster Competition (Mar 10<sup>th</sup>, 2016)

## TEACHING & MENTORING EXPERIENCE

### Instructor of Record for ME 3322-H–Thermodynamics (Georgia Tech, Fall 2017)

### Instructor of Record for ASU 101-MEE–The ASU Experience for Mechanical Engineering students (ASU, Fall 2015)

Teaching Assistant for two freshman-level courses (ASU, Spring 2011); Teaching Assistant for a sophomore- and two senior-level courses (ITB, Fall 2006-Fall 2007)

Advisor for Georgia Tech PURA Project (1): Megan W Haynes (B.S., 2018); Student Mentor for ASU Master Theses (3) and Undergraduate Projects (2): Chao-Han Lin (M.S., 2012), Christopher Ruckel (M.S.E., 2011), Rhet Stinson (M.S., 2011), Elizabeth Besenyei (B.S., 2015), Jessica Johnson (B.S., 2015), and Noah Wilson (B.S., 2016)