Laurent Pilon

University of California, Los Angeles
Mechanical & Aerospace Engineering Dept.
420 Westwood Plaza, 37-132 Eng. IV
Los Angeles, CA 90095-1597

Tel. (310) 206-5598
Fax. (310) 206-2302
pilon@seas.ucla.edu

Lab website: https://www.seas.ucla.edu/~pilon/
ORCID: https://orcid.org/0000-0001-9459-8207
Publons: https://publons.com/researcher/1419950/laurent-pilon/
Google scholar: https://scholar.google.com/citations?user=1AG9uzsAAAAJ&hl=en
Research Gate: https://www.researchgate.net/profile/Laurent-Pilon
LinkedIn: https://www.linkedin.com/in/laurent-pilon-68a7b7/

EDUCATION

PhD **PURDUE UNIVERSITY** West Lafayette, IN Dec. 2002
Mechanical Engineering (4.0/4.0)
Dissertation: "*Interfacial and Transport Phenomena in Closed-Cell Foams*"
Advisors: Profs. Raymond Viskanta and Doraiswami Ramkrishna

MS with honors **GRENOBLE INSTITUTE OF TECHNOLOGY** Grenoble, France Sept. 1997
Physics and Energy Engineering

BS with honors **GRENOBLE INSTITUTE OF TECHNOLOGY** Grenoble, France Sept. 1997
Major: Applied Physics, Minor: Energy and Nuclear Engineering

PROFESSIONAL EXPERIENCE

ADVANCED RESEARCH PROJECT AGENCY - ENERGY, U.S. DEPARTMENT OF ENERGY – WASHINGTON DC

Program Director August 2022 – present

Responsible for more than $140M of ARPA-E funds involving ~70 projects focused on materials, designs, and manufacturing methods for energy applications including
(1) technologies in support of a circular battery supply chain by prolonging the life of EV batteries and by developing reversible manufacturing and autonomous robotic disassembly methods to facilitate repair, reuse, remanufacture, and recycling;
(2) Advanced manufacturing methods for high temperature superconducting REBCO tapes;
(3) Carbon-negative building materials and circular residential and building designs and architecture;
(4) Semiconducting materials, devices, and modules for power electronics for a reliable and resilience grid;
(5) Photonics technologies and network topologies to reduce the energy consumption of data centers.

- 2023-26 Create and manage the ARPA-E IGNIITE 2025 Award Program $10M
  ***I**nspire **G**enerations of **N**ew **I**nnovators to **I**mpact **T**echnologies in **E**nergy*
  This program aims to empower early-career researchers to pursue a career in the energy space to further ARPA-E's missions and expands its ecosystem. (in collaboration with Dr. Corey Philipps)

- 2023-26 Create and manage the CIRCULAR focus program $36M
  ***C**atalyzing **I**nnovative **R**esearch for **C**ircular **U**se of **L**ong-lived **A**dvanced **R**echargeable*
  This program aims to develop foundational technology to achieve a circular supply chain (13 projects).

- 2023-26 Create and manage the ARPA-E IGNIITE 2024 Award Program $11.5M
  ***I**nspire **G**enerations of **N**ew **I**nnovators to **I**mpact **T**echnologies in **E**nergy*
  This program aims to empower early-career researchers to pursue a career in the energy space to further ARPA-E's missions and expands its community (23 projects).

- 2023-26 Create and manage the Exploratory Topic High Temperature Superconducting Tapes $10M
  This exploratory topic aims to support the development of U.S.-based manufacturing capacity and innovation for the production of high-quality low-cost high temperature superconducting tapes for nuclear fusion reactors, power electronics, transmission cables, and electric planes (3 projects).

- 2023-26 Manage the HESTIA focus program $45M
  ***H**arnessing **E**missions into **S**tructures **T**aking **I**nputs from the **A**tmosphere*
  This program aims to support the development of building materials and designs that cancel out embodied emissions while transforming buildings into carbon-negative structures. Program created by Dr. Marina Sofos in 2022 (19 projects).

- 2024-25 Serve as Alternate Chair of the Management Review Board for the SPARKS Program $10M
  ***S**purring **P**rojects to **A**dvance energy **R**esearch and **K**nowledge **S**wiftly*
  This program provides a rolling opportunity for the rapid support of early-stage applied research to explore innovative concepts with the potential for disruptive changes in energy technology (2 projects).

- 2023-25 Select and manage 2 projects as part of ARPA-E wide CREATE FOA $1M
  Perseus: Variable Cross-sectional Casting: New Composite Fabrication Process for Wind Turbine Blades
  WH Power: Low Cost All Temperature Zinc-pulp Battery for Stationary Storage

- 2023-24 Select and negotiate 4 projects (25%) of the ULTRAFAST focus program $12.3M
  ***U**nlocking **L**asting **T**ransformative **R**esiliency **A**dvances by **F**aster **A**ctuation of power **S**emiconductor **T**echnologies (Total $48 M).* Program created by Dr. O. Spahn in 2023.
  This program seeks to develop and demonstrate next-generation ultrafast power semiconductors for advanced system-level power electronics converters that would bring significant improvements in reliability, resiliency, and control of the power grid (4 projects).

- 2022-24 Manage 2 projects of the ENLITENED focus program $16M
  ***EN**ergy-efficient **L**ight-wave **I**ntegrated **T**echnology **E**nabling **N**etworks that **E**nhance **D**ataprocessing (Total $25 M).* Program created by Dr. J. Zhaler in 2017.
  This program seeks a new approach to improving datacenter energy efficiency by developing novel network topologies enabled by photonics technologies to transmit information (2 projects).

UNIVERSITY OF CALIFORNIA, LOS ANGELES, CALIFORNIA - USA

Assistant Professor	Mechanical and Aerospace Engineering Dept.	July 2002 – June 2008
Associate Professor	Mechanical and Aerospace Engineering Dept.	July 2008 – June 2012
Professor	Mechanical and Aerospace Engineering Dept.	July 2012 – present
Director	NRT-INFEWS	Sept. 2017 – Aug. 2022
Professor (WOS)	Institute of the Environment and Sustainability	July 2018 – present
Faculty Member	California NanoSystems Institute	July 2018 – present

VETERAN ADMINISTRATION GREATER LOS ANGELES HEALTH CARE SYSTEM, CALIFORNIA - USA

Research Scientist without compensation (WOC). May 2005 – June 2012.

PURDUE UNIVERSITY, SCHOOL OF MECHANICAL ENGINEERING – WEST LAFAYETTE, INDIANA - USA

Research Assistant. August 1999 – August 2002.

FRENCH ATOMIC ENERGY COMMISSION – THERMAL-HYDRAULICS AND PHYSICS DEPT., FRANCE

- Research Engineer. November 1997 – February 1999.
  French Atomic Energy Commission Representative at Purdue University, Nuclear Engineering Dept.
- Research Assistant. March 1997 – October 1997.

MANAGEMENT AND LEADERSHIP SKILLS

I am a decisive, adaptable, and collaborative technical leader with unquestionable integrity. I am a creative problem solver with excellent time management skills. I am an experienced public speaker and communicator. I motivate my collaborators to excel and I take pride in supporting them in their career development.

TECHNICAL LEADERSHIP

- Manage more than 70 ARPA-E projects for a total of more than $130M research funds to startups, large corporations, national laboratories, and academic institutions with authority to select, modified, or terminate projects.
- Manage a team of 25 technical and commercial advisors and administrative collaborators at ARPA-E.
- Serve as Director of the $3M NSF-NRT Innovation at the Nexus of Food, Energy, and Water Systems
  - 40 UCLA Professors in Engineering, Physical Sciences, and Life Sciences, and Business Schools.
  - 60 PhD students partially supported by the program (70% female and underrepresented minorities).
- Serve as principal investigator of federal grants ranging from $400,000 to $3,200,000.
- Director of the UCLA Morrin-Martinelli-Gier Memorial Laboratory (supporting and mentoring 5 post-docs, 32 Ph.D. students, 22 M.S. students, > 60 visitors since 2002).
- Served as Associate Editor of four Elsevier and ASME journals in thermal science, radiation transfer, and electric energy storage and conversion.
- Served as Guest Editor of a technical volume of ASME Journal of Heat Transfer in honor of Prof. Raymond Viskanta.
- Served as Track Chair and Session Chair of numerous professional conferences.

NEGOTIATION SKILLS

Direct negotiation for about $90M of research projects for the ARPA-E programs CIRCULAR, IGNIITE 2024, SPARKS, ULTRAFAST, HESTIA, HTS Tape, with statement of project objectives and timeline based on Specific, Measurable, Achievable, Relevant, and Time-Bounded (SMART) metrics.

PUBLIC SPEAKING

- Gave numerous keynote talks and invited seminars in government, industry, and academic settings to audiences ranging from 10 to 3,000 people including fast pitches at ARPA-E Summits, keynote lectures at conferences, and UCLA homecoming week.
- Served as master of ceremony for the inaugural ARPA-E IGNIITE Award Ceremony at the National Academy of Sciences in presence of Congressman Bill Foster, leaders of the U.S. Department of Energy, and leaders of Breakthrough Energy Ventures, Activate, and Schmidt Family Foundations.

HONORS AND AWARDS

- 2023 Outstanding Mechanical Engineering Award, Purdue University, School of Mechanical Engineering
- 2022 Visiting Professor, University of Nantes, France –Jean Rouxel Institute of Materials (declined)
- 2021 ASME Heat Transfer Memorial Award
  "For seminal and interdisciplinary contributions to the field of heat transfer, combined with interfacial phenomena, materials science & electrochemistry for the development of sustainable energy technologies"
- 2018 Special Recognition for Exceptional Service to the ASME Journal of Heat Transfer
- 2018 Elected member - Scientific Council of the International Center for Heat and Mass Transfer
- 2015 Elected ASME Fellow
- 2015 Most Valued Reviewer of JQSRT†
- 2014 Raymond Viskanta Fellowship*, Purdue University, IN.
- 2013-2015 Research Chair for Junior Scientist, Région Pays de la Loire, France.
- 2012 Best Paper Award (2nd Prize) - 3rd ASME Micro-Nanoscale HMT Conference, Atlanta, GA
- 2011 Elected SPIE Senior Member
- 2011 Henry and Susan Samueli Teaching Award from UCLA Mechanical and Aerospace Eng. Dept.
- 2009 JQSRT† Young Scientist Award in Radiative Transfer
- 2008 ASME Bergles-Rohsenow Young Investigator Award in Heat Transfer
  "For significant contributions to heat, mass and radiation transfer in foams, nanocomposite materials, and biological systems."
- 2005 National Science Foundation Faculty Early Career Development Program (CAREER) Award
- 2005 American Chemical Society - Petroleum Research Fund
- 2005 Northrop Grumman Award for Excellence in Teaching from UCLA School of Engineering
- 2003 UCLA Faculty Career Development Award

PUBLICATIONS

BOOKS AND BOOK CHAPTERS

1. **L. Pilon** and I.M. McKinley, 2016. *Chapter 7: Pyroelectric Energy Conversion* in "Annual Review of Heat Transfer", Vol. 19, pp. 279-334, G. Chen, Editor, Begell House, Danbury, CT. ISSN: 1049-0787.
2. J. Pruvost, J.-F. Cornet, **L. Pilon**, 2016. *Chapter 3: Large Scale Production of Algal Biomass*: *Photobioreactors,* in "Algae Biotechnology: Products and Processes," pp. 41-66, Y. Chisti and F. Bux, Editors, Springer, Switzerland. ISBN-13: 978-3-319-12334-9.
3. **L. Pilon** and R. Kandilian, 2016. *Chapter 2: Interaction Between Light and Photosynthetic Microorganisms*, Advances in Chemical Engineering. Vol. 46, pp. 107-149. Thematic Issue on Photobioreaction Engineering, J. Legrand, Editor, Elsevier, The Netherlands. ISBN: 978-0-12-800422-7
4. **L. Pilon,** 2014. *Chapter 25. Hydrogen Storage in Hollow Glass Microspheres* in "Handbook of Hydrogen Energy," pp. 763-807. S.A. Sherif, D.Y. Goswami, E.K. Stefanakos, A. Steinfeld, Eds., CRC Press, Taylor and Francis, Boca Raton, FL (invited contribution). ISBN-13**:** 978-1420054477.
5. **L. Pilon** and H. Berberoğlu, 2014. *Chapter 11. Photobiological Hydrogen Production* in "Handbook of Hydrogen Energy," pp. 369-418. S.A. Sherif, D.Y. Goswami, E.K. Stefanakos, A. Steinfeld, Editors, CRC Press, Taylor and Francis, Boca Raton, FL (invited contribution). ISBN-13**:** 978-1420054477.
6. **L. Pilon**, 2012. *Foams in Glass Manufacturing* in "Foam Engineering: Fundamentals and Applications," Edited by P. Stevenson, Wiley-Blackwell, United Kingdom (invited contribution). ISBN: 978-0-470-66080-5.
7. **L. Pilon**, 2003. *Interfacial and Transport Phenomena in Closed-Cell Foams*. UMI#3105002, UMI, Ann Arbor, MI, 2003.

* awarded to "an individual who has demonstrated abilities to perform independent and innovative research in the field of thermal sciences."
† Journal of Quantitative Spectroscopy and Radiative Transfer

TECHNICAL REPORTS

1. D.-S. Kim, M. Portch, J. Matyas, P. R. Hrma, **L. Pilon**, 2005. *Foaming of E-Glass II (Report for G Plus Project for PPG)*. PNNL-15394, Pacific Northwest National Laboratory, Richland, WA.
2. D.-S. Kim, P.R. Hrma, **L. Pilon**, B.C. Dutton, 2004. *Foaming of E-Glass (Report for G Plus Project for PPG)*. PNNL-14625, Pacific Northwest National Laboratory, Richland, WA.

PAPERS IN PRINT OR ACCEPTED FOR PUBLICATION

1. Y. Zhou, M. Frajnkovič, A. Likitchatchawankun, O. Munteshari, B.A. Mei, **L. Pilon**, 2024. *Three-Dimensional Step Potential Electrochemical Spectroscopy (SPECS) Simulations of Porous Pseudocapacitive Electrodes*, Electrochimica Acta, Vol. 505, 144934.
2. A. Bhanawat, R. A. Yalçin, R. Martinez, **L. Pilon**, 2024. *Dependent Scattering and Plasmon Coupling in Concentrated Suspensions of Optically Hard Nanoparticles,* Applied Physics Letters, Vol. 125, 021106.
3. S. Vallejo Castaño, E. Callagon La Plante, **L. Pilon**, G. Sant, 2024. *Analyzing the Upscaling Potential and Geospatial Siting of Calcination-Free Calcium Hydroxide Production in the United States*, Heliyon, Vol. 10, No. 12, e32426.
4. S.W. Baek, C. Z. Salamat, R. Elizalde-Segovia, P. Das, M. Frajnkovič, Y. Zhou, B.C. Thompson, S. R. Narayan, S. H. Tolbert, **L. Pilon**, 2024. *Measuring Heat Dissipation and Entropic Potential in Battery Cathodes Made with Conjugated and Conventional Polymer Binders Using Operando Calorimetry*, ACS Applied Polymer Materials, Vol. 6, No. 9, pp. 4954-4963.
5. R. Martinez, A. Bhanawat, R. A. Yalçin, **L. Pilon**, 2024. *Rigorous Accounting for Dependent Scattering in Thick and Concentrated Nanoemulsions,* The Journal of Physical Chemistry C, Vol. 128, No. 15, pp. 6419-6430.
6. D. Iyer, M. Galadari, F. Wirawan, V. Huaco, R. Martinez, M. T. Gallagher, **L. Pilon**, K. Ono, D. Simonetti, G. Sant, S. Srivastava, 2024. *High-Strength Organic-Inorganic Composites with Superior Thermal Insulation and Acoustic Attenuation*, ACS Polymer Au, Vol. 4, No. 1, pp. 86-97.
7. Y. Luo, E. Le Calvez, Y. Zhou, E. Gautron, E. Quarez, M. Preefer, O. Crosnier, J. Nelson Weker, **L. Pilon**, T. Brousse, B. Dunn, 2023. *Structure and Electrochemical Properties of Bronze Phase Materials Containing Two Transition Metals*, Chemistry of Materials, Vol. 35, No. 20, pp. 8675–8685.
8. A. Bhanawat, R. A. Yalcin, R. Martinez, **L. Pilon**, 2023. *Critical Review and Experimental Validation of Radiation Transfer Models Through Semitransparent Media Containing Large Gas Bubbles*, Journal of Quantitative Spectroscopy and Radiative Transfer, Vol. 311, 108781.
9. Y. Zhou, Y. Luo, A. Patterson, S.W. Baek, M. Frajnkovič, R. Seshadri, B.S. Dunn, **L. Pilon**, 2023. *Electrothermal Impedance Spectroscopy (ETIS) Measurements of Lithium-Ion Battery Cells Using Operando Isothermal Calorimetry*, Electrochimica Acta, Vol. 468, 143072.
10. F. R. Ferrel Ballestas, M. Titica, J. Legrand, **L. Pilon**, G. Cogne, 2023. *Prediction of the Radiation Characteristics and the Light Absorption Rate of Chlamydomonas reinhardtii Cultivated Under a Progressive Nitrogen Starvation and Accumulating Carbon Reserves*, Journal of Quantitative Spectroscopy and Radiation Transfer, Vol. 309, 108708 (November 2023).
11. G. Bar, L. Amar, M. Marszewski, A. Bolker, A. Dashti, R. Dror, **L. Pilon**, 2023. *Synthesis of Silica Aerogel Films in Liquid Molds*, Journal of Colloids and Interface Science, Vol. 648, pp. 418-426 (October 2023).
12. M.V.A. Bianchi, T.L. Bergman, V.K. Dhir, A. Faghri, A.G. Fedorov, M.P. Mengüç, A. Mohamad, **L. Pilon**, X. Ruan, T.-H. Song, B.W. Webb, X. Xu, 2023. *In Memoriam: Raymond Viskanta,* ASME Journal of Heat and Mass Transfer, Vol. 145, No.5, 050101.

13. J. Hoeniges, R. Yalcin, A. Bhowmik, V. Partusch, **L. Pilon**, 2023. *Light Absorption by Volvocaceae Colonies Consisting of Equidistant Optically Soft Photosynthetic Cells In Transparent Spherical Extracellular Matrix*, Algal Research, Vol. 72, 103082.
14. S.W. Baek, K. E. Wyckoff, D. D. Robertson, M. Frajnkovič, Y. Zhou, S. H. Tolbert, R. Seshadri, **L. Pilon**, 2023. *Operando Calorimetry Investigation of Particle Size Effects on Heat Generation in Wadsley-Roth $(W_{0.2}V_{0.8})_3O_7$-Based Electrodes*, ACS Applied Energy Materials, Vol. 6, No.3, pp. 1355-1367.
15. G. N. Kashanchi, S. King, S. E. Ju, A. Dashti, R. Martinez, Y.-K. Lin, V. Wall, P. E. McNeil, M. Marszewski, **L. Pilon**, S. H. Tolbert, 2023. *Using Small Angle X-ray Scattering to Examine the Aggregation Mechanism in Silica Nanoparticle-Based Ambigels for Improved Optical Clarity*, The Journal of Chemical Physics, Vol. 158, No.3, 034702.
16. A. Bhanawat, **L. Pilon**, 2023. *Light Transfer Through Bubble-Filled Electrolyte For Solar Water Splitting*, Sustainable Energy & Fuels, Vol. 7, pp. 448-460 (January 2023).
17. E. Simsek, J. Mandal, A.P. Raman, **L. Pilon**, 2022. *Dropwise Condensation Reduces Selectivity of Sky-Facing Radiative Cooling Surfaces*, International Journal of Heat and Mass Transfer, Vol. 198, 123399 (December 2022).
18. M. Frajnkovič, A. Likitchatchawankun, C. Douard, Y. Zhou, S.W. Baek, I. Catton, O. Crosnier, T. Brousse, **L. Pilon**, 2022. *Calorimetry Can Detect Early Onset of Hydrolysis in Hybrid Supercapacitors with Aqueous Electrolytes,* Journal of Power Sources, Vol. 548, 232069 (Nov. 2022).
19. Y. Zhou, E. Le Calvez, S. W. Baek, M. Frajnkovič, C. Douard, E. Gautron, O. Crosnier, T. Brousse, **L. Pilon**, 2022. *Effect of Particle Size on Thermodynamics and Lithium Ion Transport in Electrodes Made of $Ti_2Nb_2O_9$ Electrodes Microparticles and Nanoparticles*, Energy Storage Materials, Vol. 52, pp. 371-385 (Nov. 2022).
20. V. Wall, S.C. King, G. N. Kashanchi, S. Li, M. Li, T. Galy, D. H. Harry, S. Ju, M. Marszewski, **L. Pilon**, Y. Hu, S. H. Tolbert, 2022. *Understanding the Effect of Nanoparticle Size on Thermal Conductivity in Amorphous Nanoporous Materials Made From Colloidal Building Blocks*, The Journal of Physical Chemistry C, Vol. 126, pp. 18029-18035 (October 2022).
21. R. A. Yalcin, T. Lee, N.G. Kashanchi, J. Markkanen, S.H. Tolbert, **L. Pilon**, 2022. *Dependent Scattering in Thick and Concentrated Colloidal Suspensions*, ACS Photonics, Vol. 9, pp. 3318-3332 (October 2022).
22. E. Simsek, M. J. Williams, J. Hoeniges, K. Zhu, **L. Pilon**, 2022. *Infrared Radiation Transfer through Semitransparent Windows Supporting Absorbing Droplets,* International Journal of Heat and Mass Transfer, Vol. 194, 123043 (September 2022).
23. J. Hoeniges, W. Welch, J. Pruvost, **L. Pilon**, 2022. *A Novel External Reflecting Raceway Pond Design for Improved Biomass Productivity*, Algal Research, Vol. 65, 102742 (June 2022).
24. S. Vallejo Castaño, E. Callagon La Plante, M. Collin, G. Sant, **L. Pilon**, 2022. *A Pilot-Process for Calcium Hydroxide Production From Iron Slag By Low-Temperature Precipitation*, Journal of Environmental Chemical Engineering, Vol. 10, No. 3, 107792 (June 2022).
25. R. Vincent, Y. Luo, J. Andrews, A. Zohar, Y. Zhou, Q. Yan, E. Mozur, M.B. Preefer, J. Nelson Weker, A. K. Cheetham, J. Luo, **L. Pilon**, B.C. Melot, B. Dunn, R. Seshadri, 2022. *High-Rate Lithium Cycling and Structure Evolution in Mo_4O_{11}*, Chemistry of Materials, Vol. 34, No. 9, pp. 4122-4133 (April 2022).
26. S.W. Baek, M. Saber, A. Van der Ven, **L. Pilon**, 2022. *Thermodynamic Analysis and Interpretative Guide of Entropic Potential Measurements of Battery Electrodes*, Journal of Physical Chemistry C, Vol. 126 No. 14, pp. 6096-6110. (***featured article on the cover***)
27. A. Van der Ven, K. See, **L. Pilon**, 2022. *Hysteresis in Electrochemical Systems*, Battery Energy, 20210017 (**invited review**).
28. K. E. Wyckoff, J. L. Kaufman, S. W. Baek, C. Dolle, J. J. Zak, J. Bienz, L. Kautzsch, R. C. Vincent, A. Zohar, K. A. See, Y. M. Eggeler, **L. Pilon**, A. Van der Ven, R. Seshadri, 2022. *Metal-Metal Bonding*

as an Electrode Design Principle in the Low-Strain Cluster Compound $LiScMo_3O_8$, The Journal of the American Chemical Society, Vol. 144, No. 13, pp. 5841-5854.

29. S.W. Baek, M.B. Preefer, M. Saber, K. Zhai, M. Frajnkovič, Y. Zhou, B.S. Dunn, A. Van der Ven, R. Seshadri, **L. Pilon**, 2022. *Potentiometric Entropy and Operando Calorimetric Measurements Reveal Fast Charging Mechanisms in PNb_9O_{25}*, Journal of Power Sources, Vol. 520, 230776.
30. T. Galy, **L. Pilon**, 2022. *Dependent Scattering Effects in Aggregates with Touching or Overlapping Non-Absorbing Spherical Particles*, Journal of Quantitative Spectroscopy and Radiative Transfer, Vol. 278, 108018.
31. F. Huisman, E. Simsek, T. Galy, F. Samaan, **L. Pilon**, 2022. *Reversible Sequin Fabric as Variable Emittance Surfaces*, International Journal of Heat and Mass Transfer, Vol. 183, Part B, 122167.
32. M. Marszewski, S.C. King, T. Galy, G.N. Kashanchi, A. Dashti, Y. Yan, M. Li, D.M. Butts, P.E. McNeil, E. Lan, B. Dunn, Y. Hu, S.H. Tolbert, **L. Pilon**, 2022. *Transparent Nanoparticle-Based Silica Aerogel Slabs Synthesized at Near Ambient Conditions on Omniphobic Substrates,* Journal of Colloids and Interface Sciences, Vol. 606, No. 1, pp. 884-897.
33. A. Bhanawat, K. Zhu, **L. Pilon**, 2022. *How Bubbles Affect the Performance of a Photoelectrode in Solar Water Splitting*, Sustainable Energy & Fuels, Vol. 6, pp. 910-924.
34. M. Marszewski, A. Dashti, P.E. McNeil, M. Fox, V. Wall, D.M. Butts, S.C. King, G.N. Kashanchi, S.H. Tolbert, B. S. Dunn, **L. Pilon**, 2022. *Elastic and Plastic Mechanical Properties of Nanoparticle-Based Silica Aerogels and Xerogels,* Mesoporous Microporous Materials, Vol. 330, 111569.
35. A. Kundu, **L. Pilon**, T.S. Fisher, 2021. A *Continuum Model of Heat Transfer in Electric Double Layer Capacitors with Porous Electrodes Under Constant-Current Cycling*, Journal of Power Sources, Vol. 511, 230404.
36. J. Hoeniges, K. Zhu, W. Welch, E. Simsek, **L. Pilon**, 2021. *Transmittance of Transparent Horizontal and Tilted Windows Supporting Large Non-Absorbing Pendant Droplets*, Journal of Quantitative Spectroscopy and Radiative Transfer, Vol. 275, 107876.
37. M. Jacobs, X. Zhou, E. Olivera, R. Sheil, S. Huang, M. Marszewski, J. Chang, S. Tolbert, S. Osher, **L. Pilon**, J, Marian, 2021. *Room Temperature Rectification in Tapered-Channel Thermal Diodes Through Nanoscale Confinement-Induced Liquid-Solid Phase Change*, Journal of Applied Physics, Vol. 129, No. 7, 075103.
38. S.W. Baek, K.E. Wyckoff, D.M. Butts, J. Bienz, A. Likitchatchawankun, M.B. Preefer, M. Frajkovič, B.S. Dunn, R. Seshadri, **L. Pilon**, 2020. *Operando Calorimetry Informs the Origin of Rapid Rate Performance in Microwave-Prepared $TiNb_2O_7$ Electrodes*, Journal of Power Sources, Vol. 490, 229537.
39. E. Simsek, K. Zhu, N. Kashanchi, M. J. Williams, T. Galy, M. Marszewski, S. H. Tolbert, **L. Pilon**, 2021. *Light Transfer through Semi-transparent Windows Supporting Pendant Droplets*, Journal of Quantitative Spectroscopy and Radiative Transfer, Vol. 261, 107493.
40. A. Likitchatchawankun, R.H. DeBlock, G. Whang, O. Munteshari, M. Frajnkovič, B.S. Dunn, **L. Pilon**, 2021. *Heat Generation in Electric Double Layer Capacitors with Neat and Diluted Ionic Liquid Electrolytes Under Large Potential Window Between 5 and 80 ºC*, Journal of Power Sources, Vol. 488, 229368.
41. J. Hoeniges, K. Zhu, J. Pruvost, J. Legrand, E. Si-Ahmed, **L. Pilon**, 2021. *Impact of Dropwise Condensation on Biomass Productivity of Enclosed Photobioreactors*, Energies, invited in the Special Issue "Conception, Modelling, Control, and Intensification of Photobioreactors Applied to the Valorization of Microalgae", J. Legrand, Editor, Vol. 14, 268.
42. S. Vallejo Castaño, E. Callagon La Plante, S. Shimoda, B. Wang, N. Neithalath, G. Sant, **L. Pilon**, 2021. *Calcination-Free Production of Calcium Hydroxide at Sub-Boiling Temperatures.* RSC Advances, Vol. 11, pp. 1762-1772.
43. E. Simsek, M.J. Williams, **L. Pilon**, 2021. *Effect of Dew and Rain on Photovoltaic Solar Cell Performances*, Solar Energy Materials and Solar Cells, Vol. 222, 110908.

44. S. C. King, M. Li, T. Galy, Y. Yan, J.S. Kang, Y. Li, M. Marszewski, **L. Pilon**, Y. Hu, S.H. Tolbert, 2020. *Examining the Role of Atomic Scale Heterogeneity on the Thermal Conductivity of Transparent, Thermally Insulating, Mesoporous Silica-Titania Thin Films,* The Journal of Physical Chemistry C, Vol. 124, No. 50, pp. 27442–27452.
45. D.M. Butts, P.E. McNeil, M. Marszewski, E. Lan, T. Galy, M. Li, J.S. Kang, D. Ashby, S. King, S.H. Tolbert, Y. Hu, **L. Pilon**, B.S. Dunn, 2020. *Engineering Mesoporous Silica for Superior Optical and Thermal Properties,* MRS Energy & Sustainability, Vol. 7, E39.
46. J. Hoeniges, R. Kandilian, C. Zhang, J. Pruvost, J. Legrand, D. Grizeau, **L. Pilon,** 2020. *Effect of Colony Formation on Light Absorption by Botryococcus braunii*, Algal Research, Vol. 50, 101985.
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UNREFEREED CONFERENCE PROCEEDINGS AND ORAL OR POSTER PRESENTATIONS

49. A. Bhanawat, **L. Pilon**, 2023. *Effect of Gas Bubbles on Light Transfer During Photoelectrochemical Water Splitting*, SHTC2023-117232, Symposium in Memory of Professor Raymond Viskanta, ASME Summer Heat Transfer Conference, July 10-12, 2023, Washington, DC, USA (abstract and oral presentation).
50. Y. Zhou, E. Le Calvez, S. W. Baek, M. Frajnkovič, C. Douard, E. Gautron, O. Crosnier, T. Brousse, **L. Pilon**, *Effect of Particle Size on Electrochemical Performance and Heat Generation of Lithium-Ion Battery Electrodes*, SHTC2023-116944, ASME Summer Heat Transfer Conference, July 10-12, 2023, Washington, DC, USA (abstract and oral presentation).
51. R. A. Yalcin and **L. Pilon**, *Dependent Scattering in Thick and Concentrated Colloidal Suspensions*, Photon, Phonon, and Electron Transitions in Coupled Nanoscale Systems, 745. WE-Heraeus-Seminar, Physikzentrum Bad Honnef, Germany, Sept. 19-23, 2022.
52. R. Vincent, Y. Luo, Y. Zhou, J. Andrews, A. Zohar, E. Mozur, A. Cheetham, **L. Pilon**, B. Melot, B.S. Dunn, R. Seshadri, 2022. *High-Rate Electrochemical Lithium Cycling and Structure Evolution in Mo_4O_{11}*, 241st Electrochemical Society Meeting, May 29-June 2, 2022, Vancouver, BC, Canada (Abstract 155827 and oral presentation).
53. Y. Zhou, E. Le Calvez, S. W. Baek, M. Frajnkovič, C. Douard, O. Crosnier, T. Brousse, **L. Pilon**, "Effect of particle size on thermodynamics and lithium ion transport in $Ti_2Nb_2O_9$ electrodes synthesized by solid state or sol-gel method," 241st Electrochemical Society Meeting, May 29 – June 2, 2022, Vancouver, BC, Canada (abstract 160516 and poster).
54. G. N. Kashanchi, S. King, S. Ju, V. Wall, M. Marszewski, A. Dashti, **L. Pilon**, S. H. Tolbert, 2022. *Investigating Silica-Nanoparticle Aggregation Using In Situ Small-Angle X-Ray Scattering for Optimization of Nanoparticle-Based Aerogels for Window,* ACS Spring 2022, San Diego, CA - March 20-24, 2022 (Abstract and oral presentation).

55. I. De Rosa, X. Wenbo, A. Dashti, **L. Pilon**, A. Tamburrano, F. Sarasin, 2021. *Carbon Nanotube Sheets in Advanced Multifunctional Composites*, AAAFM-UCLA International Conference on Advances in Functional Materials 2021, Los Angeles, USA - August 18-20, 2021.
56. A. Likitchatchawankun, J. Lau, O. Munteshari, **L. Pilon**, 2019. *The Effect of Temperature on Heat Generation Rate in Electric Double Layer Capacitors with Ionic Liquid Electrolyte*, ASME International Mechanical Congress and Exposition, Salt Lake City, November 11-14, 2019, IMECE2019-13919 (abstract and oral presentation).
57. O. Munteshari, A. Borenstein, R.H. DeBlock, J. Lau, G. Whang, Y. Zhou, A. Likitchatchawankun, R. Kaner, B. Dunn, **L. Pilon**, 2019. *Effect of Potential Window on Heat Generation at Activated Carbon Electrodes in Neat or Diluted Ionic Liquid Electrolytes*, ASME International Mechanical Congress and Exposition, Salt Lake City, November 11-14, 2019, IMECE2019-13086 (abstract and oral presentation).
58. E. Simsek, M. Welte, A. Steinfeld, **L. Pilon**, 2019. *Population Balance Modeling for Thermochemical Reduction of Ceria Particles in Falling Particle-Transport Solar Reactors*, ASME International Mechanical Congress and Exposition, Salt Lake City, November 11-14, 2019, IMECE2019-13286 (abstract and oral presentation).
59. E. Callagon La Plante, S. Vallejo Castaño, N. Neithalath, **L. Pilon**, G. Sant, 2019. *Low-Temperature Synthesis of Portlandite for Carbon Dioxide Mineralization*, AIChE 2019 Carbon Management Technology Conference, July 15-18, 2019, Houston, TX (abstract 553235).
60. T. Galy, D. Mu, G. Tang, **L. Pilon**, 2018. *How to Make Silica Aerogel Transparent?*, ASME International Mechanical Congress and Exposition, Pittsburgh, PA, November 9-15, 2018, IMECE2018-88885 (abstract and oral presentation).
61. O. Munteshari, J. Lau, A. Likitchatchawankun, B.-A. Mei, C.S. Choi, B. Dunn, **L. Pilon**, 2019. *Heat Generation Rate Measurements in Hybrid Supercapacitors Devices*, ASME International Mechanical Congress and Exposition, Pittsburgh, PA, November 9-15, 2018, IMECE2018-88886 (abstract and oral presentation).
62. A. Likitchatchawankun, A. Kundub, O. Munteshari, T. S. Fisher, **L. Pilon**, 2019. *Heat Generation in All-Solid-State Supercapacitors with Graphene Electrodes and Gel Electrolytes*, ASME International Mechanical Congress and Exposition, Pittsburgh, PA, November 9-15, 2018, IMECE2018-88899 (abstract and oral presentation).
63. A. Kundu, **L. Pilon**, T.S. Fisher, 2018. *Continuum Modeling of Heat Generation in Porous Electrical Double-Layer Capacitors During Galvanostatic Charge/Discharge*, ASME International Mechanical Congress and Exposition, Pittsburgh, PA, November 9-15, 2018, IMECE2018-88903 (abstract and oral presentation).
64. B.-A. Mei and **L. Pilon**, 2018. *Physical Interpretations of Impedance Spectra for Pseudocapacitive Electrodes*, 233rd Electrochemical Society Meeting, May 13-17, 2018, Seattle, WA (abstract 164).
65. O. Munteshari, J. Lau, B. Dunn, **L. Pilon**, 2018. *Effect of Electrode Composition on Heat Generation Rate in Electrical Double Layer Capacitors*, 233rd Electrochemical Society Meeting, May 13-17, 2018, Seattle, WA (abstract 163 and oral presentation).
66. B.-A. Mei and **L. Pilon**, 2017. *Interpretation of Nyquist Plot for Characterization of Electrode and Electrolyte Material Properties for Electrical Double Layer Capacitors*, 231st Electrochemical Society Meeting, May 28-June 1, 2018, New Orleans, LA (abstract 1468 and oral presentation).
67. K. Zhu, Y. Huang, J. Pruvost, J. Legrand, **L. Pilon**, 2017. Transmittance of Windows with Condensed Droplets on their Backside in Solar Energy Applications, HT2017-5110, ASME Summer Heat Transfer Conference, July 9-14, 2017, Bellevue, WA, USA (abstract and oral presentation).
68. O. Munteshari, J. Lau, B. Dunn, **L. Pilon**, 2017. *Time-dependent Heat Generation Rate in Electric Double Layer Capacitors Under Constant-current Cycling,* HT2017-5111, ASME Summer Heat Transfer Conference, July 9-14, 2017, Bellevue, WA, USA (abstract and oral presentation).

69. N.M.A. Krishnan, B. Wang, G. Falzone, Y. Le Pape, N. Neithalath, **L. Pilon**, M. Bauchy and G. Sant, 2017. *The Origin of Anomalous Thermal Expansion Behavior in Calcium-Silicate-Hydrates*, ICACMS 2017: 19th International Conference on Applied and Computational Mathematical Sciences, May 18-19, 2017, Paris, France (abstract and oral presentation).
70. B.A. Young, G. Sant, **L. Pilon**, 2017. *Temperature Control Schemes for Buildings with PCM-Composite Envelopes*, ASTFE2017, 2nd Thermal and Fluids Engineering Conference (TFEC) and 4th International Workshop on Heat Transfer**,** April 2-5, 2017, Las Vegas, NV (abstract and oral presentation).
71. J. Rubalcava-Cruz, B.A. Young, G. Sant, **L. Pilon**, 2017. *Effective Thermal Expansion Coefficient of Three-Component Core-Shell-Matrix Composites*, ASTFE2017, 2nd Thermal and Fluids Engineering Conference (TFEC) and 4th International Workshop on Heat Transfer**,** April 2-5, 2017, Las Vegas, NV (abstract and oral presentation).
72. H. Liu, X. Xia, R. Kitamura, **L. Pilon**, 2016. *Retrieving the Conductive and Radiative Properties of Soda-Lime Silicate Glassmelts from Temperature Measurements*, ASME Summer Heat Transfer Conference, July 10-14, 2016 Washington D.C., USA (abstract and oral presentation).
73. A. Ricklefs, A.M. Thiele, G. Falzone, G. Sant, **L. Pilon**, 2016. *Thermal Conductivity of Cementitious Composites Containing Microencapsulated Phase Change Materials*, ASME Summer Heat Transfer Conference, July 10-14, 2016 Washington D.C., USA (abstract and oral presentation).
74. B.-A. Mei and **L. Pilon**, 2016. *Transport Phenomena in Electrical Double Layer Capacitors with Highly Ordered 3D Porous Carbon Electrodes*, 229th Electrochemical Society Meeting, May 29-June 2, 2016, San Diego, CA (abstract 1582 and oral presentation).
75. **L. Pilon**, B.-A. Mei, H.L. Girard, 2016. *Interfacial and Transport Phenomena in Hybrid Pseudocapacitors Electrochemical Capacitors (invited)*, 229th Electrochemical Society Meeting, May 29-June 2, 2016, San Diego, CA (abstract 1585).
76. R. Kandilian, J. Pruvost, J. Legrand, **L. Pilon**, 2014. *Optimization of triglyceride production with respect to light using Nannochlorpsis oculata* (O2.21). 4th International Conference on Algal Biomass, Biofuels and Bioproducts, June 15-18, 2014, Santa Fe Convention Center, New Mexico, USA (abstract and oral presentation).
77. J.A. Attia and **L. Pilon**, 2013. *Stability and Temperature Profile in Aqueous Foams Exposed to Infrared Radiation*, ASME Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013. HT2013-17639 (abstract and oral presentation).
78. I.M. McKinley and **L. Pilon**, 2013. *Effect of Phase Transitions on Energy Density in Pyroelectric Energy Conversion*, ASME Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013. HT2013-17634 (abstract and oral presentation).
79. **L. Pilon**, P. Janos, R. Kitamura, 2013. *Thermal Conductivity Measurements of Clear and Colored Glassmelts at High Temperatures*, ASME Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013. HT2013-17574 (abstract and oral presentation).
80. R. Kandilian, J. Pruvost, J. Legrand, **L. Pilon**, 2013. *Radiation Characteristics of the Microalgae Nannochloropsis oculata Subjected to Progressive Nitrogen Starvation for Lipid Accumulation,* The 2nd European Congress on Applied Biotechnology ECAB2, The Hague, Netherlands, April 21-25, 2013 (abstract and poster presentation).
81. J.W. Hernlund, K. Ohta, H. Gomi, E.S.G. Rainey, K. Hirose, S. Labrosse, R. Caracas, A. Kavner, **L. Pilon**, C. Houser, 2011. *Preliminary Core-Mantle Boundary Heat Flux Map*. American Geophysical Union Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011 (abstract).
82. E.S.G. Rainey, A. Kavner, J. Hernlund, **L. Pilon**, 2011. *Measuring Thermal Conductivity at High Pressure and Temperature in the Laser-Heated Diamond Anvil Cell*. American Geophysical Union Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011 (abstract).

83. I. McKinley and **L. Pilon**, 2011. *Waste Heat Energy Harvesting Using Olsen Cycle on PZN-5.5PT Single Crystals*, 6th Annual Energy Harvesting Workshop, Roanoke, VA, August 7-11, 2011.
84. R. Kandilian and **L. Pilon**, 2011. *Pyroelectric Energy Conversion Using PMN-32PT Single Crystals*, 6th Annual Energy Harvesting Workshop, Roanoke, VA, August 7-11, 2011 (abstract and oral presentation).
85. D. Yudovsky, **L. Pilon**, A. Nouvong, K. Schomacker. *Optical Model of Skin for Early Non-Invasive Detection of Wound Development on the Diabetic Foot,* SPIE BiOS: Biomedical Optics, Advanced Biomedical and Clinical Diagnostic Systems VIII, edited by T. Vo-Dinh, W. S. Grundfest, A. Mahadevan-Jansen, San Francisco, CA, January 23-28, 2010, Proceedings of SPIE, Vol. 7555, 755514 (abstract and oral presentation).
86. K. D. Smith, **L. Pilon**, K. Dipple, 2006. *Assessing Toxicity of Nanoparticles*, Toxic Substances Research and Teaching Program. 19th Annual Research Symposium, San Diego, April 28-29, 2006.

PATENT GRANTED

1. G. Sant, **L.G. Pilon**, B. Wang, N. Neithalath, Z. Wei, B.A. Young, G.D. Falzone, D. Simonetti, *Efficient Integration of Manufacturing of Upcycled Concrete Product into Power Plants*, U.S. Patent US 11,247,940 B2, February 15, 2022.
2. I.M. McKinley and **L.G. Pilon**, *Thermomechanical Cycle for Thermal and/or Mechanical Energy Conversion Using Piezoelectric Materials,* U.S. Patent US 10,170,678 B2, January 1, 2019.
3. **L.G. Pilon** and K. M. Katika. *Time-Resolved Non-Invasive Optometric Device for Medical Diagnostic*, U.S. Patent No. 7,904,140 B2, March 8, 2011.

PENDING PATENT APPLICATIONS

4. **L.G. Pilon**, B.S. Dunn, S.H. Tolbert, M. Marszewski, Y. Yan, S.C. King, E.H. Lan, D. Butts, P.E. McNeil, 2018. *Optically-Transparent and Thermally-Insulating Nanoporous Coatings and Monoliths.* U.S. Patent US 2021-0207428-A1, July 8, 2021.
5. B. Wang, **L.G. Pilon**, N. Neithalath, G. Sant, 2016. *Upcycled CO_2-Negative Concrete Product for Use in Construction*, U.S. Provisional Application Serial No. 62/413,375, October 26, 2016. International Application No. PCT/US2017/058357, October 25, 2017. International Publication No. WO2018/081308, May 3, 2018.
6. G. Sant, **L.G. Pilon**, E. B. Callagon La Plante, B. Wang, S. Vallejo Castaño, 2023. *Facile, Low-Energy Routes for the Production of Hydrated Calcium and Magnesium Salts From Alkaline Industrial Wastes,* U.S. Provisional Application Serial No. 2023/0159346 A1, May 25, 2023.

ABANDONED PATENT APPLICATIONS

7. **L. Pilon**, 2011. *Direct Conversion of Nanoscale Thermal Radiation to Electrical Energy Using Pyroelectric Materials*, U.S. Patent Application Serial No. 13/155,288, filed June 7, 2011, Pub. No.: US 2011/0298333 A1 (abandoned by UCLA for lack of funds).
8. **L. Pilon** and H. Berberoğlu, 2006. *Method and Apparatus for Liquid Microencapsulation with Polymers Using Ultrasonic Atomization*, U.S. Patent Application Serial No. 11/238,089, filed Sept. 27, 2005, Pub. No.: US 2006/0071357 A1 (abandoned by UCLA).

SPEAKING ENGAGEMENTS

INVITED PRESENTATIONS AT CONFERENCES

As ARPA-E Program Director

1. NATO Applied Vehicle Technology – AVT 409 Workshop - Life Cycle Analysis of Sustainable Technology for Military Platforms, Washington, DC, May 20-21, 2025. ***Invited Speaker***. *Life Cycle Assessment and Circularity Tools in Support of Selected ARPA-E Programs.*

2. 10th American Society for Thermal and Fluid Engineers (ASTFE) Conference, Washington, DC, March 9-12, 2025. ***Panelist***.
3. 10th American Society for Thermal and Fluid Engineers (ASTFE) Conference, Washington, DC, March 9-12, 2025. ***Panelist*** *Federal Funding for Energy Applications.*
4. Navy Research Laboratory Chemistry Division Colloquium, Washington, DC, December 12, 2024. ***Invited Speaker***. *Chemistry Needs for A Circular EV Battery Supply Chain.*
5. 3rd Annual Conference of Battery Sustainability, Massachusetts Institute of Technology and Northeastern University, Burlington, MA, December 4, 2023. ***Keynote Speaker***. *CIRCULAR: Catalyzing Innovative Research for Circular Use of Long-lived Advanced Rechargeables*.
6. Energy & Propulsion Conference & Exhibition, SAE International, Columbus, OH, November 12-14, 2024. ***Keynote Speaker.*** *Technology Needs for A Circular EV Battery Supply Chain*.
7. Yale Clean Energy Conference, New Haven, CT, October 10-11, 2024. ***Invited Speaker***. **Tech Talk.** *Critical Materials and Circular Economy for Batteries*.
8. UC San Diego Sustainable Power and Energy Center (SPEC), San Diego, CA, Sept. 16-17, 2024. ***Invited Speaker***. *Technology Needs for a Truly Circular EV Battery Supply Chain*.
9. 9th International Conference on Superconductivity and Magnetism, Fethiye, Turkiye, April 27-May 4, 2024. ***Invited Speaker***. *ARPA-E Investment in Domestic Manufacturing of High Temperature Superconducting Tapes*.
10. DARPA Concrete Stakeholder Workshop, Arlington, VA, Feb. 12, 2024. ***Invited Speaker***. *ARPA-E Program Harnessing Emissions Into Structures Taking Inputs from the Atmosphere (HESTIA)*.
11. 2nd Annual Conference of Battery Sustainability, Massachusetts Institute of Technology and Northeastern University, Burlington, MA, December 5-6, 2023. ***Keynote Speaker***. *Technology Needs for a Truly Circular EV Battery Supply Chain*.
12. Department of Energy, Energy Efficiency & Renewable Energy (DOE/EERE), Advanced Materials and Manufacturing Technology Office (AMMTO), CABLE 2023 Big Idea Workshop, November 14-15, 2023, Boulder, CO. *ARPA-E Investment in High Temperature Superconducting Tapes*.
13. 2023 Waygate Technologies Battery Inspection Forum, Cincinnati, OH, Nov. 7-8, 2023. ***Keynote Speaker***. *Technology Needs for a Truly Circular EV Battery Supply Chain*.
14. National Renewable Energy Laboratory, Golden, CO, September 19, 2023. ***Keynote Speaker***. *ARPA-E's Investment in Energy Storage and Building Technologies.*
15. Saint Gobain R&D Center, Northborough, MA, August 28, 2023. ***Keynote Speaker***. *Technology Needs and Opportunities in the Electrification of the Transportation Sector.*
16. Suppliers Partnership for the Environment 2023 Innovation Summit, Columbus, OH, July 26, 2023. ***Invited Speaker***. *How to Achieve a Circular Battery Supply Chain?*
17. 2023 Naval Research in Superconductivity Annual Review Meeting, Philadelphia, PA, June 14, 2023. ***Invited Speaker***. *ARPA-E's Interest in Superconducting and Cryogenic?*
18. ReCell Center Industry Collaboration Meeting, Argonne National Laboratory, Lemont, IL, April 26, 2023. ***Invited Speaker***. *ARPA-E Effort to Achieve a Circular Battery Supply Chain?*

As UCLA Professor

1. ACerS Glass & Optical Materials Division (GOMD 2024), Las Vegas, NV, May 19–23, 2024. ***Invited Speaker***. *Thermally Insulating Yet Optically Clear Mesoporous Silica Monoliths for Energy Applications.*
2. 244th Electrochemical Society ECS Meeting, Gothenburg, Sweden – October 8-12, 2023. ***Invited Speaker***. *Potentiometric Entropy Measurements and Operando Calorimetry to Identify the Charging Mechanisms in Battery Materials*. Symposium A07 - Interplay between Temperature and Battery Phenomenon.
3. 241th Electrochemical Society ECS Meeting, Vancouver May 29 – June 2, 2022. ***Invited Speaker***. *Potentiometric Entropy and Operando Calorimetric Measurements to Assess the Performance of*

Heterogeneous Lithium Ion Battery Electrodes. Symposium on Heterogeneous Functional Materials for Energy Conversion and Storage 3.

4. International e-Workshop on Radiation Transport and Applications - January 21-22, 2022. ***Invited Speaker***. *Light Transfer in Photobioreactors for CO_2 Capture and Biofuel Production*, Indian Institute of Technology, Bhubaneswar.
5. 2021 MRS Spring Meeting & Exhibit, Boston, MA, November 28-December 3, 2021. Symposium EQ16-Infrared and Thermal Photonic Materials and Their Applications. ***Invited Speaker***. *Radiative Properties of Optically Clear Mesoporous Silica Films and Monoliths*.
6. The 4th International Conference of Energy Harvesting, Storage, and Transfer (EHST'20), Niagara Falls, Canada, June 14-16, 2020. ***Invited Keynote Speaker***. *New Materials for Energy Efficient Buildings*.
7. International Symposium on Enhanced Electrochemical Capacitors, ISEECap 2019, Nantes, France, May 6-10, 2019. ***Invited Keynote Speaker***. *Thermal Signature of Ion Intercalation and Surface Redox Reactions in Model Pseudocapacitive Electrodes.*
8. 2019 MRS Spring Meeting & Exhibit, Phoenix, AZ, April 22-26, 2019. Symposium ES09: Thermal Energy—Transfer, Conversion, and Storage. ***Invited Speaker***. *Transparent and Thermally Insulating Mesoporous Silica Slabs for Energy Applications*.
9. 2017 International Symposium on Porous Materials for Energy and Environment (PM4EE2017), Qingdao, China, December 17-19, 2017. ***Invited Speaker***. *Modeling Interfacial and Transport Phenomena in Hybrid Pseudocapacitors*.
10. 2017 MRS Fall Meeting & Exhibit, Boston, November 26-December 1, 2017. Symposium ES09: Thermal Energy—Transfer, Conversion, and Storage. ***Invited Speaker***. *Pyroelectric Energy Conversion*.
11. **L. Pilon**, J. Pruvost, R. Kandilian, 2017. 6th Congress of the International Society of Applied Phycology (ISAP 2017), June 18-23, 2017, Nantes, France. ***Invited Speaker***. *The importance of light transfer for microalgae growth kinetics and metabolite production*.
12. 229th Electrochemical Society ECS Meeting, San Diego May 29 – June 3, 2016. ***Invited Speaker***. *Interfacial and Transport Phenomena in Hybrid Pseudocapacitors*.
13. 7th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media, InterPore, Padova, Italy, May 18-21, 2015. ***Invited Speaker***. *Interfacial and Transport Phenomena in Electrochemical Capacitors*.
14. 226th Meeting of the Electrochemistry Society, Cancun, Mexico, 5-10 October 2014. ***Invited Speaker***. *Continuum Modeling of Interfacial and Transport Phenomena in Electrochemical Capacitors.*
15. Asia-Pacific Conference on Electrochemical Energy Storage & Conversion (APEnergy2014), Brisbane Convention & Exhibition Centre, Brisbane, Australia, 5-8 February 2014. ***Invited Keynote Speaker***. *Continuum Modeling of Interfacial and Transport Phenomena in Electric Double Layer Capacitors*.
16. International Heat Transfer Conference (IHTC-14), Washington, DC, August 8-13, 2010. ***Invited Speaker.*** *Radiation Transfer in Photobiological Fuel Production.* Forum 1: Radiative Transfer and Properties for Renewable Energy Applications organized by Q. Zhu and Z. Zhang.
17. IEEE Winter Topical Meeting on Advanced Imaging in Bio-Photonics, 2010. Palma de Mallorca, Spain, January 11-13, 2010. *Evaluation of Diabetic Foot Ulcer Development Using Hyperspectral Imaging* (invited presentation).
18. K. M. Katika and **L. Pilon**, 2005. *Modified Method of Characteristics for Solving the Transient Radiative Transfer Equation*, ***Invited Speaker***, Eurotherm Seminar 82, Numerical Heat Transfer 2005, Vol. 2, pp. 333-342, September 13–16, 2005, Krakow, Poland, Eds.: A. Nowak, R.A. Biaolecki.

INVITED PRESENTATIONS AT UNIVERSITIES, NATIONAL LABS, & CORPORATIONS

1. George Washington University, Department of Mechanical Engineering, Washington, DC, April 27, 2023. *Washington, DC. Thermally Insulating Yet Optically Clear Mesoporous Silica Monoliths for Energy Efficient Windows.*

2. Georgia Institute of Technology, George W. Woodruff School of Mechanical Engineering, Atlanta, GA, February 27, 2023. *Thermally Insulating Yet Transparent Mesoporous Silica Monoliths For Energy Efficiency Windows.*
3. United States Army Research Laboratory, Adelphi, MD, February 17, 2023. *Potentiometric Entropy Measurements and Operando Calorimetry to Identify the Charging Mechanisms in Battery Materials.*
4. Korean Advanced Institute of Science and Technology, Mechanical Engineering Department, eSymposium: Carbon-Free Energy Technology: Thermal and Hydrogen Aspects, December 1-2, 2022. *Operando Calorimetry to Assess the Performance of Lithium Ion Batteries.*
5. Rutgers, The State University of New Jersey, Mechanical Engineering Department, January 26, 2022. *Potentiometric Entropy and Operando Calorimetric Measurements to Assess the Performance of Heterogeneous Lithium Ion Battery Electrodes.*
6. University of Utah, Mechanical Engineering Department, Distinguished Seminar Series, September 18, 2020. *New Materials for Energy Efficient Buildings.*
7. University of Nantes, Process Engineering for Environment and Food Laboratory (GEPEA), France, June 6, 2019. *Innovation at the Nexus of Food, Energy, and Water Systems in Urban Environments.*
8. University of Maribor, Maribor, Slovenia April 18, 2019. *Microencapsulated Phase Change Materials for Energy Efficient Buildings*.
9. Jožef Stefan Institute, Ljubljana, Slovenia April 17, 2019. *In Operando Calorimeter for Electrochemical Capacitors.*
10. University of Ljubljana, Ljubljana, Slovenia April 16, 2019. *Pyroelectric Energy Conversion.*
11. California State University Northridge, CA. November 18, 2017. *UCLA Innovates at the Nexus of Food, Energy, and Water Systems,* California Renewable Energy and Storage Technology (CREST 2017) conference.
12. Swiss Federal Institute of Technology, ETH Zurich, Switzerland. August 25, 2017. *Microencapsulated Phase Change Materials for Energy Efficient Buildings*.
13. Arizona State University, Tempe, AZ. September 9, 2016. *Microencapsulated Phase Change Materials for Energy Efficient Buildings*.
14. University of California, Riverside. October 23, 2015. *Light Transfer in Photobioreactors for CO_2 Capture and Biofuel Production.*
15. Vanderbilt University, Nashville, TN, September 14, 2015. *Continuum Modeling of Interfacial and Transport Phenomena in Electric Double Layer Capacitors*.
16. University of Nantes, France, Institut des Matériaux Jean Rouxel, 16 July 2014. *Continuum Modeling of Interfacial and Transport Phenomena in Electric Double Layer Capacitors*.
17. Purdue University, West Lafayette, IN, April 21, 2014. *A Technology Portfolio for a Renewable Energy Future. Kenninger Renewable Energy and Power Systems Seminar.*
18. Purdue University, West Lafayette, IN, March 26, 2014. *Continuum Modeling of Interfacial and Transport Phenomena in Electric Double Layer Capacitors*. *Raymond Viskanta Lecture.*
19. University of California, San Diego, Mechanical and Aerospace Engineering Department, October 21, 2013. *Transport Phenomena and Scaling Laws in Aqueous Foams.*
20. University of Nantes, Process Engineering for Environment and Food Laboratory (GEPEA), France, July 4, 2013. *Characterization and Control of Light Transfer in Photobioreactors.*
21. Swiss Federal Institute of Technology, ETH Zurich, Institute of Energy Technology, Switzerland, December 14, 2012. *Highly Ordered Mesoporous Materials for Energy Applications.*
22. Workshop on Development of Microalgae Industrial Biotechnology: From Animal Food to Bioenergy**.** Organized by French Bio Beach Association, UCSD Campus, La Jolla, CA, November 12, 2012. *Light Transfer in Photobiofuel Production Using Microalgae*.
23. University of California, Merced, Mechanical Engineering Department, November 9, 2012. *Radiation Transfer in Photobiological Fuel Production Using Microalgae.*

24. Clemson University, Mechanical Engineering Department, October 12, 2012. *Transport Phenomena in Supercapacitors*.
25. University of California Los Angeles, Electrical Engineering Department, February 2, 2012. *Light Transfer in Carbon Dioxide Fixation and Biofuel Production*.
26. University of California Los Angeles, Material Science and Engineering Department, October 7, 2011. *Highly Ordered Mesoporous Materials for Energy Applications*.
27. University of Minnesota, Saint Paul, MN, September 15, 2010. *Highly Ordered Mesoporous Materials for Energy Applications*.
28. Columbia University, New York, NY, February 17, 2010. *Highly Ordered Mesoporous Materials for Energy Applications*.
29. University of Texas at Dallas, October 8th, 2009. *Optical and Thermal Properties of Highly Ordered Mesoporous Thin Films*.
30. University of Science and Technology, Beijing, People's Republic of China, August 20, 2009. *Optical and Thermal Properties of Highly Ordered Mesoporous Thin Films*.
31. Dalian University of Technology, Dalian, People's Republic of China, August 19, 2009. *Photobiological CO_2 Capture and H_2 Production*.
32. Tsinghua University, Beijing, People's Republic of China, August 16, 2009. *Overview* of *Renewable Energy Research in Pilon's Lab at UCLA*.
33. Pekin University, Beijing, People's Republic of China, August 16-21, 2009. IUTAM Summer School on Mechanics in Microfluidics. *Interfacial Phenomena and Microfluidics in Foams.*
34. California State University, Chico, July 17th, 2009. Research Experience for Undergraduates Program, Mathematic Department. *Mathematical Modeling in Biomedical Applications.*
35. University of California, Riverside, CA, May 29th, 2009. *Optical and Thermal Properties of Highly Ordered Mesoporous Thin Films*.
36. Columbia University, New York, NY, April 17th, 2009. *Photobiological Hydrogen Production*.
37. ASME International Conference on Micro/Nanoscale Heat Transfer, MNHT 2008, Tainan, Taiwan. January 6-9, 2008. *Effective Optical Properties of Nanocomposite Thin Films* (invited speaker).
38. Nagoya University, Nagoya, Japan, March 26rd, 2007. *Temporal Nanoscale Radiation Transfer for Non-Invasive Sensing of Biological Tissues*. 1st Nagoya University-UCLA Symposium on Micro-Nano Mechatronics for Future Biomedicine.
39. Asahi Glass Corporation Research Center, Yokohama, Japan, March 23rd, 2007.
40. University of Kentucky, April 27th, 2006. William Maxwell Reed Seminar, Mechanical Engineering Department. *Tuning the Optical and Radiation Properties of Material Using Nanobubbles*.
41. University of New Mexico, October 18th, 2005. Nuclear and Chemical Engineering Department. *Time-Resolved Photometry For Sensing Biological Tissues*.
42. University of Southern California, April 6th, 2005. Mechanical and Aerospace Engineering Department. *Time-Resolved Photometry For Sensing Biological Tissues*.
43. Brigham Young University, Thermal Science Seminar, Mechanical Engineering Department, September 16th, 2004. *Interfacial and Transport Phenomena in Liquid/Gas Foams.*
44. Soft Matter Seminar, Physics Department, UCLA, March 19th, 2004. *Formation and stability of liquid foams.*
45. Center for Thermal Science of Lyon (CETHIL), Lyon, France, Dec. 17th, 2003. *Backward Method of Characteristics for Nanoscale and Radiative Heat Transfer.*
46. Universitat Politècnica de Catalunya, Barcelona, Spain, Sept. 16-17th, 2002. *Talk #1: Interfacial and Transport Phenomena in Closed-Cell Foams. Talk #2: Modified Method of Characteristics for Solving the Population Balance Equation*.
47. Saint-Gobain Recherche, Aubervilliers, France, Sept. 6th, 2002. Phénomènes de Transport dans les Fours à Verre : Bulles, Mousses, et Tapis de Composition.

48. Massachusetts Institute of Technology, Department of Mechanical Engineering, Feb. 25th, 2002. *Interfacial and Transport Phenomena in Closed-Cell Foams.*
49. University of Connecticut, Department of Mechanical Engineering, Jan. 30th, 2002. *Interfacial and Transport Phenomena in Closed-Cell Foams.*
50. French Atomic Energy Commission, Grenoble, France, Sept. 6th, 2001. *Bulles, Formation des Mousses, Phénomènes de Transport dans les Fours à Verre.*
51. Technical University of Eindhoven, Glass Technology Group, Eindhoven, the Netherlands, Sept. 2001. *Foams: formation and Transport Phenomena.*
52. Swiss Federal Institute of Technology (ETH), Laboratory for Thermodynamics in Emerging Technologies, Zurich, Switzerland, Sept. 2001. *Foams: formation and Transport Phenomena.*
53. Purdue University School of Nuclear Engineering Seminar, Mar. 1998. *The French Nuclear Safety Code CATHARE.*

PROFESSIONAL SERVICE AND PROFESSIONAL ORGANIZATIONS

FEDERAL COMMITTEES AND BOARDS

- *Federal Consortium on Advanced Batteries, Working Group 4 – Battery Recycling, 2022-present*
- Federal Consensus Board, Building Technology Office, U.S. Department of Energy, May 31, 2023 *BENEFIT FOA Topic 2 on Thermal Energy Storage*

EDITORIAL RESPONSIBILITIES

- Associate Editor, 2024-present. *International Journal of Heat and Mass Transfer (Elsevier)*
- Guest Editor of Special Issue in Honor of Prof. Raymond Viskanta, 2022. *ASME Journal of Heat Transfer*
- Associate Editor 2021-2024. *ASME Journal of Electrochemical Energy Conversion and Storage*
- Associate Editor, 2020-2024 *Journal of Quantitative Spectroscopy & Radiative Transfer (Elsevier)*
- Editorial Board Member, 2018-2022. *Applied Physics*, Section *Energy*, an open-source journal by MDPI, Basel, Switzerland,
- Associate Editor 2018. *International Heat Transfer Conference, Beijing*
- Associate Editor 2015-2018. *ASME Journal of Heat Transfer*
- Editorial Board Member, 2012-2016. *Medical Instrumentation,* open-source journal by Herbert Publications, UK

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- The American Ceramic Society (2002- 2005, 2013-present)
- The American Society of Mechanical Engineers (2000- present)
- The Optical Society of America (2004- present)
- The International Society for Optical Engineering - SPIE (2005-present)
- International Society of Electrochemistry (2012-present)
- Interpores (2013-present)
- The Electrochemical Society (2014- present)

MEMBERSHIP IN SCIENTIFIC COMMITTEES

- **Member of the International Scientific Committee** of the 5th International Symposium on Radiation Transfer (RAD V), Bodrum, Turkey, June 17-23, 2007.
- **Member of the International Scientific Committee** of the 6th International Symposium on Radiation Transfer (RAD 10), Antalya, Turkey, June 13-16, 2010.
- **Member of the International Scientific Committee** of the Eurotherm Seminar 95 on Computational Thermal Radiation in Participating Media IV, Nancy, France, April 18-20, 2012.

- **Member of the International Scientific Committee** of the 2nd International Conference on Mechanical Engineering and Mechatronics (ICMEM'13), Toronto, Ontario, Canada, August 8-9, 2013.
- **Member of the International Scientific Committee** of the 2012 International Conference on Mechanical Engineering and Mechatronics (ICMEM'12), Ottowa, Canada, August 16-18, 2012.
- **Member of the International Scientific Committee** of the 7th International Symposium on Radiation Transfer (RAD 13), Kuşadası, Turkey, June 2-8, 2013.
- **Member of the Program Committee for the Optics for Solar Energy (SOLAR) Conference** part of the OSA Optics and Photonics Congress for Light, Energy and the Environment, Cambera, Australia, December 2-5, 2014.
- **Member of the International Advisory Committee of** The Energy & Material Research Conference - EMR2015, Madrid, Spain, February 25-27, 2015.
- **Member of the International Advisory Committee** of the 5th International Symposium on Micro and Nano Technology, Calgary, Canada, May 18-20, 2015.
- **Member of the International Scientific Committee** of the Eurotherm Seminar 96 on Computational Thermal Radiation in Participating Media V, Albi, France, April 1-3, 2015.
- **Member of the Program Committee** of the 8th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media (Interpore), Cincinnati, OH, May 9-12, 2016.
- **Member of the International Scientific Committee** of the 8th International Symposium on Radiation Transfer (RAD 16), Nevsehir, Turkey, June 6-10, 2016.
- **Member of the International Scientific Committee** of the European Advanced Materials Congress, M/S Mariella, Viking Line, Stockholm, Sweden, August 23-25, 2016.
- **Member of the International Advisory Committee** of The Energy & Material Research Conference - EMR2015, Lisbon, Portugal, April 5-7, 2017.
- **Member of the International Scientific Committee** of the 6th International Conference on Computational Thermal Radiation in Participating Media (CTRPM-VI), Cascais, Portugal, April 9-11, 2018.
- **Member of the International Program Committee** of the 5th International Conference on Bioimaging - BIOIMAGING 2018, January 19-21, 2018, Funchal, Madeira, Portugal.
- **Member of the International Scientific Committee** of the 9th International Symposium on Radiation Transfer (RAD 19), Athens, Greece, June 3-7, 2019.
- **Member of the International Scientific Committee** of the 6th International Conference on Computational Thermal Radiation in Participating Media (CTRPM-VII), Mons, Belgium, April 14-16, 2021.
- **Member of the International Scientific Committee** of the 10th International Symposium on Radiation Transfer (RAD 22), Athens, Greece, June 12-16, 2023.
- **Member of the International Scientific Committee** of the 3rd Asian Conference on Thermal Sciences, Shanghai, China, June 23-27, 2024.

REVIEWER FOR ARCHIVAL JOURNALS

Thermal Sciences and Energy Journals

- ASME Journal of Heat Transfer
- ASME Journal of Energy Resources Technology
- Heat Transfer - Asian Research
- Heat Transfer Engineering
- Int. J. of Heat and Mass Transfer
- Int. J. of Hydrogen Energy
- Int. J. of Multiscale Computational Engineering
- Int. J. for Numerical Methods in Fluids
- Int. J. of Thermal Sciences
- Int. J. of Thermophysics
- Joule

Phycology and Bioprocesses

- Algal Research
- Bioresource Technology
- Journal of Applied Phycology
- Photochemical & Photobiological Sciences

Chemical and Biochemical Engineering

- Asia-Pacific Journal of Chemical Engineering
- Biotechnology and Bioengineering
- Chemical Engineering and Processing
- Chemical Engineering Journal
- Chemical Engineering Science
- ECS Solid State Letters

- Journal of Energy
- J. of Thermophysics and Heat Transfer
- J. of Thermal Science & Engineering Applications
- Numerical Heat Transfer
- Measurement Science and Technology
- Energy Conversion and Management
- Industrial & Engineering Chemistry Research

Materials Science Journals

- ACS Applied Materials & Interfaces
- ACS Nano
- Acta Materialia
- Electrochimica Acta
- IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control J. of Composite Materials
- Ionics
- J. of Manufacturing Processes
- J. of Non-Crystalline Solids
- J. of Reinforced Plastics and Composites
- J. of the American Ceramic Society
- Microporous and Mesoporous Materials
- Macromolecules
- Materials Chemistry and Physics
- Nano Energy
- Nature Materials
- Polymer Letters
- Polymer International
- Smart Materials and Structures
- J. Intelligent Material Systems and Structures
- Metallurgical and Materials Transactions B
- Thermochimica Acta
- Progress in Oceanography
- Separation Science and Technology
- Langmuir

Applied Optics and Radiation Transfer Journals

- Applied Optics
- IR Physics and Technology
- Journal of the Optical Society of America A
- J. of Quant. Spectroscopy & Radiative Transfer
- J. of Biomedical Optics
- Optics Express
- Journal of European Academy of Dermatology And Venereology

Physics, Chemistry, Surface Science Journals

- Applied Physics Letters
- Applied Surface Science
- Chemistry Letters
- Colloids and Surfaces A
- Electrochemistry Communications
- European Physical Journal Applied Physics
- IEEE Sensors Journal
- Journal of Applied Physics
- J. of Colloids and Interface Science
- J. of the Electrochemical Society
- J. of MEMS
- J. of Physics D: Applied Physics
- Physics of Fluids
- Review of Scientific Instruments
- Sensors and Actuators, A: Physical
- The Journal of Physical Chemistry

REVIEWER OF MANUSCRIPTS SUBMITTED FOR PRESENTATION TO

- ISHMT/ASME Heat and Mass Transfer Conference 2002
- ASME, International Mechanical Engineering Congress & Exposition (IMECE), 2003, 2004, 2005, 2006, 2007, 2008.
- 106th American Ceramic Society Meeting, Indianapolis, April 2004
- 4th International Symposium on Radiative Transfer, Istanbul, Turkey, June 2004
- ASME National Heat Transfer Summer Conference 2003, 2004, 2005, 2009, 2010, 2011, 2012
- InterPack'05, San Francisco, July 2005
- Eurotherm Seminar 78, Poitiers April 5-7, 2006.
- ASME-JSME Thermal Engineering and Summer Heat Transfer Conference, July 8-12, 2007, Vancouver, BC, Canada.
- 5th International Symposium on Radiative Transfer, Bodrum, Turkey, June 17-22, 2007.
- 6th International Symposium on Radiative Transfer, Antalya, Turkey, June 13-19, 2010.
- 14th International Heat Transfer Conference, Washington, D.C., August 8-13, 2010.
- 8th ASME/JSME Thermal Engineering Joint Conference, Honolulu, Hawaii, USA March 13-17, 2011.
- 2011 ASME Int. Mechanical Engineering Conference & Exposition, Denver CO, Nov. 7-11, 2011.
- 7th International Symposium on Radiative Transfer (RAD-13), Kuşadası, Turkey, June 2013.
- 8th International Symposium on Radiative Transfer (RAD-16), Cappadocia, Turkey, June 6-10 2016.

- 9th International Symposium on Radiative Transfer (RAD-19), Athens, Grece, June 3-7, 2019.
- 10th International Symposium on Radiative Transfer (RAD-23), Thessaloniki, Greece, June 12-16, 2023.

CHAIR OF TECHNICAL MEETINGS

- *2005 ASME Summer Heat Transfer Conference, San Francisco, CA, July 17-22, 2005*
  - Co-Chair, Track 1-4. Heat Transfer in Hydrogen Generation and Storage Systems
  - Co-Chair, Track 14-13. Tutorial on Numerical Methods in Micro- Nano-Scale Thermal Transport
- *2006 ASME Int. Mechanical Engineering Conference and Exposition, Chicago, IL, Nov. 5-10, 2006*
  - Chair, HT-1B. Radiative Heat Transfer in Energy Systems
  - Co-Chair, HT-5C Electron, phonon, and photon interactions
- *2007 ASME Int. Mechanical Engineering Conference & Exposition, Seattle, WA Nov. 11-15, 2007*
  - Co-Chair, Track 8-27 Radiation Transfer in Energy Systems
- *3rd ASME Energy Nanotechnology International Conference, Jacksonville, Florida, Aug. 10-14, 2008*
  - Member of the Technical Program Committee
  - Co-Chair, Track 4 Fundamental Issues of Nanoscale Energy Carrier Transport and Conversion
- *2009 ASME Summer Heat Transfer Conference, San Francisco, CA, July 19-23, 2009*
  - Co-Chair, Track 1-7 Heat and Mass Transfer in Fuel Cells and Solar Energy Systems
- *14th International Heat Transfer Conference (IHTC-14), Washington, DC, August 8-13, 2010*
  - Co-Chair, Track 18-2 Phonon Transport and Thermal Conductivity
  - Co-Chair, Track 29-1 Thermodynamic Fundamentals and Systems
- *ASME-JSME 8th Thermal Engineering Joint Conference, Honolulu, Hawaii, March 13-17, 2011*
  - Co-Chair, Track 1-2-13, Computational Heat and Mass Transfer (Heat Conduction & Diffusion)
- *2011 ASME Int. Mechanical Engineering Conference & Exposition, Denver CO, Nov. 14-11, 2011*
  - Co-Chair, Track 1-10-2 Thermophysical Properties of Materials
  - Co-Chair, Track 2-10-4 Transport Phenomena in Energy Systems
- *2012 ASME 3rd Micro/Nanoscale Heat & Mass Transfer Int. Conf.***,** *Atlanta, GA March 3-6, 2012*
  - Co-Chair, Track 2-4 Heat and Mass Transfer in Nanofluids
- *2012 ASME Summer Heat Transfer Conference, Puerto Rico, July 8-12, 2012*
  - Track Chair for Track 1 Heat Transfer in Energy Systems
- *2013 ASME Summer Heat Transfer Conference, Minneapolis, MN, July 14-19, 2013*
  - Session Chair for 1-3-1 Waste Heat Harvesting I
  - Session Chair for 1-3-2 Waste Heat Harvesting II
  - Session Chair for 1-7-1 Great Experiments in Heat Transfer
- *2016 ASME Summer Heat Transfer Conference, Washington, DC, July 10-14, 2016*
  - Topic Co-organizer, Track 1-2-1 – Heat Transfer in Energy System-Fundamentals I
  - Topic Co-organizer, Track 1-2-2 – Heat Transfer in Energy System-Fundamentals II
  - Topic Co-organizer, Track 1-2-3 – Heat Transfer in Energy System-Fundamentals III
- *2016 229th Electrochemical Society (ECS) Meeting, San Diego, May 29 - June 2, 2016*
  - Co-Chair, I05 – Track: Heterogeneous Functional Materials for Energy Conversion and Storage, Session: Electrochemical Capacitors 1
- *2017 ASME Summer Heat Transfer Conference, Bellevue, July 9-12, 2017*
  - Session Co-Chair. Fundamentals of Nanomaterials and Nanostructures for Energy Applications
  - Session Co-Chair: Mini-symposium on Solar Energy Science and Technology in Honor of Prof. Yogi Goswami
- *2017 MRS Fall Meeting & Exhibit, Boston, November 26-December 1, 2017*
  - Session Co-Chair. Session 11 in Symposium ES09: Thermal Energy—Transfer, Conversion and Storage
- *2019 International Symposium on Enhanced Electrochemical Capacitors, ISEECap 2019, Nantes,* France, May 6-10, 2019.

  - Session Co-Chair. Modeling of Phenomena and Systems
- *2022, ASME Summer Heat Transfer Conference, France, July 10-12, 2022.*
  - Symposium Co-Chair with X. Ruan, X. Xu, M.P. Menguc, and M. Bianchi. Symposium in Honor of Prof. Raymond Viskanta.

CONSULTING

FEDERAL GOVERNMENT

- Federal Trade Commission, Technology Enforcement Division, May-June 2021

CORPORATION

- Asahi Glass Corporation, Yokohama, Japan, 2011-2013
- Alticor, parent company of Amway and Access Business Group, Grand Rapid, MI, 2008-2009
- Seoul Viosys, Seoul, South Korea, 2014-2017
- The ADEPT Group, Los Angeles, CA, 2020
- Cooley, LLC, Washington, DC, June-December 2021
- Fish and Richardson, PC, Dallas, TX, January 2022

PUBLISHERS

- M.F. Modest, S. Mazumder, 2018. *Radiative Heat Transfer, 4th Edition,* Elsevier. Review of book proposal.
- M.J. Moran, H.N. Shapiro, D.D. Boettner, M.B. Bailey, 2015. *Fundamentals of Engineering Thermodynamics 7th Edition,* ISBN-13: 978-0470917688. Review of WileyPLUS Learning Space
- P. Stevenson and J. Wadhawan, 2015. *Thermodynamics for Chemical Engineering: A Process Approach*, CRC Press/Taylor & Francis Group. Review of book proposal.
- Johannes M. Nitsche and Ludwig C. Nitsche, 2013. *Problems in Chemical Engineering: Transport Phenomena,* book proposal to Springer, New York, NY, U.S.A.
- M. J. Moran and H. N. Shapiro, 2013. *Fundamentals of Engineering Thermodynamics,* Review the proposed development of digital resources for Wiley & Sons.
- Li-Zhi Zhang, 2012. *Conjugated Heat and Mass Transfer in Ducts of Heat and Mass Exchangers,* book proposal to Academic Press / Elsevier.
- M. Modest, 2010. *Radiative Heat Transfer*, 3rd Edition, Academic Press, San Diego, CA, USA.
- M. J. Moran and H. N. Shapiro, 2006. *Fundamentals of Engineering Thermodynamics*, 6th Edition, Wiley & Sons (Chapter 1 to 3).
- Y. A. Cengel & M. A. Boles, 2005. *Thermodynamics – An Engineering Approach*, 6th Edition, Mc. Graw Hill.

ACADEMIC INSTITUTIONS

- University of Texas, Austin – NRT-INFEWS proposal preparation - January 2018

REVIEWING AND ASSESSMENT ACTIVITIES

AS A PROGRAM DIRECTOR AT ARPA-E

- The U.S. Department of Energy, EERE, Building Energy Technology Office, Concept Paper, DE-FOA-0003158 BENEFIT 23/24 FOA, Topic 2 on Thermal Energy Storage, January 2024
- The U.S. Department of Energy, ARPA-E, CREATE FOA Program, September- May 2023
- The U.S. Department of Energy, EERE, Building Energy Technology Office, Concept Paper, DE-FOA-0002788 BENEFIT 22/23 FOA, Topic 2 on Thermal Energy Storage, February 2023
- The U.S. Department of Energy, EERE, Industrial Efficiency and Decarb, Concept Paper, DE-FOA-0002804, October 2022

TECHNICAL REVIEWER FOR PROPOSALS SUBMITTED TO

- The U.S. Department of Energy, ARPA-E, OPEN FOA Program, September-October 2021
- U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE), Solar Energy Technology Office (SETO), May-June, 2021
- King Fahd University of Petroleum and Minerals, December 2019
- U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE), Solar Energy Technology Office (SETO), September 2019
- Agence National de la Recherche (French National Science Foundation), Paris France, May 2019
- Agence National de la Recherche (French National Science Foundation), Paris France, May 2018
- U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE), Solar Energy Technology Office (SETO), September 2018
- UCLA Sustainable LA Grand Challenge, 2016
- UCLA Sustainable LA Grand Challenge, 2015
- King Fahd University of Petroleum and Minerals, May 2014
- The U.S. National Science Foundation, December 2013
- The National Center of Science and Technology Evaluation of Kazakhstan, February 2013
- Région Rhône-Alpes, Lyon, France, February 2012
- The Estonian Science Foundation (ETF), October 2011
- Nebraska Center for Energy Sciences Research, October 2011
- The U.S. Department of Energy, ARPA-E, HEATS Program, August 2011
- The National Science Foundation, Arlington, VA – December 2010
- Public Service Electric and Gas, Energy Technology Demonstration Grant Program, NJ – Aug. 2010
- The National Science Foundation, Arlington, VA – August 2010
- The American Diabetes Association - September 2007
- The University of California Energy Institute, Berkeley, CA – June 2007
- The National Science Foundation, Arlington, VA – August 2007
- The University of California Energy Institute, CA – March 2007
- The National Science Foundation, Arlington, VA – June 2006
- The National Science Foundation, Arlington, VA – February 2006
- The National Science Foundation, Arlington, VA – October 2005
- The National Science Foundation, Arlington, VA – April 2005
- The Kentucky Science & Engineering Foundation R&D Excellence Program – 2004

INTERNATIONAL EVALUATION OF RESEARCHERS

1. Dr. Philippe Ben Abdallah, Habilitation à Diriger des Recherches (HDR)
   Transferts de Chaleur par Rayonnement dans les Matériaux Composites Micro et Nanostructurés
   Université de Nantes, France - June 23, 2008.
2. Dr. Domingos de Sousas Meneses, Habilitation à Diriger des Recherches (HDR)
   Ordre, Désordre, et Changement de Phase à la Lumière de la Spectroscopie Infrarouge
   Université de Orléans, France - July 23, 2015.

TEACHING EXPERIENCE

PURDUE UNIVERSITY, DEPT. OF FOREIGN LANGUAGES – WEST LAFAYETTE, INDIANA - USA
Instructor. Department of Foreign Languages. August 1998 – May 1999
- Led recitations for classes of undergraduate students (total of 75 students in two semesters).
- Designed, conducted, and evaluated written examinations for the classes.

PURDUE UNIVERSITY, SCHOOL OF NUCLEAR ENGINEERING – WEST LAFAYETTE, INDIANA - USA
- Conducted workshop for users of the thermal-hydraulics nuclear safety code CATHARE.

PURDUE UNIVERSITY, CENTER FOR INSTRUCTIONAL EXCELLENCE COLLEGE TEACHING
- Attended Workshop: *Can a professor be entertaining and effective?* February 2001.

UNIVERSITY OF CALIFORNIA, DEPT. OF MECHANICAL & AEROSPACE ENGINEERING – LOS ANGELES, CA
- 2005 – Developed the new graduate course *MAE 285 Interfacial Phenomena*
- 2014 – Developed a new undergraduate course *MAE 136 Energy and the Environment*
- 2018 – Developed a new graduate course ENV 241

UNIVERSITY OF CALIFORNIA, SCHOOL OF ENGINEERING AND APPLIED SCIENCE – LOS ANGELES, CA
- 2013 – Developed engineering school-wide Technical Breath Area (TBA) in *Energy and the Environment*
  - All UCLA undergraduate engineering students are required to satisfy a TBA requirement
  - TBA in *Energy and the Environment* requires students to take 3 out of 6 selected courses
  - Approved by the UCLA Undergraduate Council in Spring 2013.
- Fall 2017, 2018 – Faculty Teaching Faculty about Teaching (FT^2). *Assessing and Improving Engineering Student's Math Skills.* An hour long presentation of my experience developing online mathematics quizzes and assessment for UCLA Engineering Undergraduate Students.

UNIVERSITY OF CALIFORNIA, LOS ANGELES, CA
- *M1B. Food: A Lens for Environment and Sustainability,* Guest lecturer for Environmental General Elective Freshman Cluster class
  - Feb. 3rd, 2017. *Microalgae for CO_2 Capture, Food, and Biofuel Production*
  - Feb. 5th, 2018. *Microalgae for CO_2 Capture, Food, and Biofuel Production*
  - January 15, 2019. *Microalgae for CO_2 Capture, Food, and Biofuel Production*

UNIVERSITY OF CALIFORNIA, DEPT. OF MECHANICAL & AEROSPACE ENGINEERING – LOS ANGELES, CA

	Course	Title	Quarter (# students)	My rating	Average Dept.
UNDERGRADUATE COURSES	**MAE 105A**	Introduction to Engineering Thermodynamics	S' 03 (72)	7.98/9.00	7.24/9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 03 (56)	8.00/9.00	7.42/9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 05 (100)	7.86/9.00	7.42/9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 07 (89)	7.81/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 08 (86)	7.95/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	W' 13 (109)	7.96/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 14 (91)	8.23/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	W' 17 (105)	8.32/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	W' 18 (106)	8.71/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 18 (82)	8.67/9.00	7.42 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	S' 20 (117)	7.28/9.00	7.79 /9.00
	MAE 105A	Introduction to Engineering Thermodynamics	F' 21 (108)	8.04/9.00	7.79/9.00
	MAE 105D	Transport Phenomena	S' 04 (38)	8.23/9.00	7.54/9.00
	MAE 105D	Transport Phenomena	S' 09 (75)	8.10/9.00	7.54/9.00
	MAE 131A	Intermediate Heat Transfer	W' 03 (38)	8.13/9.00	7.34/9.00
	MAE 131A	Intermediate Heat Transfer	W' 04 (73)	7.98/9.00	7.01/9.00
	MAE 131A	Intermediate Heat Transfer	W' 05 (61)	8.15/9.00	7.16/9.00
	MAE 131A	Intermediate Heat Transfer	W' 06 (47)	8.29/9.00	7.26/9.00
	MAE 131A	Intermediate Heat Transfer	F' 09 (58)	8.48/9.00	7.26/9.00
	MAE 131A	Intermediate Heat Transfer	W' 11 (74)	8.70/9.00	7.26/9.00
	MAE 131A	Intermediate Heat Transfer	W' 12 (43)	8.22/9.00	7.26/9.00
	MAE 131A	Intermediate Heat Transfer	F' 13 (16)	8.80/9.00	7.26/9.00
	MAE 131A	Intermediate Heat Transfer	F' 19 (55)	8.61/9.00	7.39/9.00

	MAE 136	Energy and the Environment	W' 15 (61)	7.97/9.00	/9.00
	MAE 136	Energy and the Environment	S' 17 (66)	8.06/9.00	
	MAE C136	Energy and the Environment	S' 21 (70)	8.42/9.00	7.61/9.00
	MAE C136	Energy and the Environment	W' 22 (77)	7.64/9.00	7.61/9.00
	MAE 157	Basic Mechanical Engineering Lab.	S' 07 (24)	8.20/9.00	7.17/9.00
GRADUATE COURSES	**MAE C236**	Energy and the Environment	S' 21 (21)	8.60/9.00	7.61/9.00
	MAE 231B	Radiation Heat Transfer (with Prof. R. Viskanta)	W' 06 (11)	7.46/9.00	7.26/9/00
	MAE 231B	Radiation Heat Transfer	W' 07 (18)	6.94/9.00	7.54/9.00
	MAE 231B	Radiation Heat Transfer	W' 08 (16)	7.67/9.00	7.54/9.00
	MAE 231B	Radiation Heat Transfer	W' 09 (22)	7.62/9.00	7.54/9.00
	MAE 231B	Radiation Heat Transfer	S' 10 (18)	7.75/9.00	7.54/9.00
	MAE 231B	Radiation Heat Transfer	F' 10 (24)	8.24/9.00	7.54/9.00
	MAE 231B	Radiation Heat Transfer	F' 11 (19)	8.47/9.00	7.93/9.00
	MAE 231B	Radiation Heat Transfer	S' 13 (30)	8.40/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	S' 14 (15)	8.54/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	S' 15 (9)	8.67/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	S' 16 (19)	8.62/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	S' 17 (23)	6.58/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	S' 18 (23)	8.50/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	W' 19 (20)	8.50/9.00	7.77/9.00
	MAE 231B	Radiation Heat Transfer	W' 20 (18)	8.67/9.00	7.53/9.00
	MAE 231B	Radiation Heat Transfer	W' 21 (16)	8.67/9.00	7.64/9.00
	MAE 281	Microsciences (with Prof. C.J. Kim)	F' 03 (42)	6.82/9.00	7.42/9.00
	MAE 285	Interfacial Phenomena	S' 05 (9)	6.75/9.00	7.54/9.00
	MAE 285	Interfacial Phenomena	S' 08 (24)	8.23/9.00	7.54/9.00
	MAE 285	Interfacial Phenomena	S'12 (25)	8.52/9.00	7.66/9.00
	MAE 298	Advanced Transport Phenomena	F' 04 (8)	8.14/9.00	7.11/9.00
	MAE 298	Advanced Clean Energy	S' 11 (32)	7.00/9.00	

MENTOR IN SUMMER PROGRAMS FOR UNDERGRADUATE & GRADUATE RESEARCH

- 2003 UC LEADS[§]: James Washington
- 2006 UC LEADS: Gbenga Elehinafe
- 2006 UCLA RISE-UP[+]: Owolabi Olaleke
- 2007 UCLA RISE-UP: Gbenga Elehinafe
- 2007 UCLA RISE-UP: Neal Hutchinson
- 2007 UCLA RISE-UP: Neal Hutchinson
- 2007 UCLA SPUR[*]: Pedro Gomez
- 2008 UCLA RISE-UP: Neal Hutchinson
- 2008 UCLA RISE-UP: Abubakar Bah
- 2009 UCLA SPUR: David E. Moreno-Magaña
- 2009 UCLA SPUR: Shuk H. Chan
- 2010-2011 UCLA RISE-UP: Gabriel Garcia
- 2011-2012 UCLA RISE-UP: Broc Chavez
- 2015-2016 UCLA RISE-UP: Christopher Perez
- 2015-2016 UCLA CARE: Christopher Perez
- 2015-2016 UC LEADS: Jose Rubalcava-Cruz
- 2017-2019 UC LEADS: Aisha Kermiche

[§] UC Leadership Excellence through Advanced Degrees
[+] RISE-UP: Research Intensive Series in Engineering for Under-Represented Populations

* SPUR: Summer Programs for Undergraduate Research

OUTREACH ACTIVITIES AND COMMUNICATION

1. **Columbia Energy Exchange, podcast hosted by Bill Loveless, July 25, 2023.** *Enabling Risky But Promising Technology*.
   URL: https://www.energypolicy.columbia.edu/arpa-e-enabling-risky-but-promising-technology/
2. **ARPA-E Summit 2023,** March 22-24, 2023. Fast Pitch: *How to achieve a domestic and circular battery supply chain?*
3. **ARPA-E,** Meet the Program Director: Dr. Laurent Pilon, January 19, 2023.
   URL: https://arpa-e.energy.gov/news-and-media/blog-posts/meet-program-director-dr-laurent-pilon
4. **YouTube – UCLA STEM Students Inspiring The Next Generation.** A 5-minute-long video showcasing a diverse group of under-represented female trainees from the NSF-funded research traineeship in Innovation at the Nexus of Food, Energy, and Water Systems.
   URL: https://youtu.be/_qBim9ZYhrc
5. **UCLA** research traineeship in Innovation at the Nexus of Food, Energy, and Water Systems (INFEWS)
   URL: http://infews.ucla.edu/
6. **UCLA Undergraduate Research Center – Sciences – Student Spotlight** – feature undergraduate student in our laboratory Megan Williams, August 25, 2021.
   URL: http://sciences.ugresearch.ucla.edu/2021/08/25/megan-williams/
7. **Instructor. Campbell Hall School**, Studio City, CA. December 7, 2018. "*Food, Energy, and Water in the 21st Century Megalopolis*". Event organized for high school students in science honor class. Audience of ~ 25 students and teachers.
8. **Faculty Speaker (one of three) for the 2018 Bruin Family Weekend.** October 26, 2018. "*Food, Energy, and Water in the 21st Century Megalopolis*". Event organized by UCLA for family of current UCLA students. Audience of ~350 people.
9. **Interview**: *Why Gas-Fired Power Plants are on the Chopping Block in SoCal*, March 16, 2018, by Sharon McNary, for Southern California Public Radio.
   URL: https://www.scpr.org/news/2018/03/16/81714/why-gas-fired-power-plants-are-on-the-chopping-blo/
10. **Featured UCLA Faculty in video**. *12 UCLA Faculty Who Were Also First-Gen College Grads,* October 2, 2017.
    URL: https://youtu.be/oPiCqRdkf7Q,
11. **Interview**: *This French Engineer Has a Plan to Make L.A. Sustainable*, by Melody Chan, France-Amerique (Bilingual), September 28, 2017.
    URL: https://france-amerique.com/en/this-french-engineer-has-a-plan-to-make-l-a-sustainable/
12. **Member of the Board of Directors of the Alliance Française of Los Angeles, CA.** January 1, 2013-June 30, 2015. Also in charge of organizing a quarterly scientific event for the general public called "Café des Sciences".
13. **Instructor. Orthopaedic Hospital Medical Magnet High School**, Los Angeles, CA. January 14, 2013. *Microalgae: Sustainable Biofuel of the Future?*
14. **Instructor. UCLA Anderson School of Management, Leaders in Sustainability Program**. *Nuclear Energy: Good, bad, or an acceptable alternative?* Los Angeles, CA, January 24th, 2013. Host: Prof. Magalie Delmas.

15. **Instructor. UCLA Anderson School of Management, Leaders in Sustainability Program**. *Nuclear Energy: Good, bad, or an acceptable alternative?* Los Angeles, CA, March 6th, 2012. Host: Prof. Charles Corbett.
16. **Seminar**: Café des Sciences organized by the French Office for Science and Technology, Los Angeles, CA. October 4, 2012. *Microalgae For Sustainable Biofuel Production (in French)*.
17. **Interview**: *PortTechLA Asking An Expert About Biofuels: A Discussion with UCLA Professor Laurent Pilon*, April 3, 2012.
URL: http://porttechla.org/component/content/article/18-technology-focus/54-ask-an-expert-biofuels
18. **NSF IGERT Story**. *Outreaching to Local Middle School Class*
URL: http://www.igert.org/stories/98.html
19. **Seminar**: Bloomberg Cars & Fuels Briefing, Hammer Museum, Los Angeles, CA December 1st, 2009. *Photobiological Hydrogen and Biodiesel Production*.
20. **Seminar**: UCLA Professor in The Union, February 27th, 2007. *Energy for Tomorrow – Powering the 21st Century*.
21. **Seminar**: California State University, Chico, July 21st, 2006. Research Experience for Undergraduates Program, Mathematic Department. *Mathematical Modeling in Biomedical Optics*.
22. **Seminar**: UCLA Professor in The Union, February 1st, 2005. *Energy for Tomorrow – Powering the 21st Century*.
23. **Member of the panel of discussion** on "*Mastering the Academic Interview - Science & Engineering*" organized by the UCLA career center on Wednesday, November 13, 2002.

MENTORING

POST-DOCTORAL SCHOLARS

1. *Dr. Michal Marszewski, November 2016 – December 2020*
Current position: Assistant Professor, University of Toledo, Toledo, OH
2. *Dr. Arka Bhowmik, April 2015-January 2016*
Current position: Post-Doctoral Fellow, Indian Institute of Technology, Kharagpur, India
3. *Dr. Julian Varghese. Sept. 2009- April 2011*
Current position: Software Engineer, DS Spatial Corp., Bloomfield, CO
4. *Dr. Juan Yin. June 2005 - June 2006*
Current position: Solar Turbines, San Diego, CA

PH.D. STUDENTS

1. Kamal M. Katika, PhD Thesis, September 2007.
Transient Radiation Transport in Biological Tissues & Applications to Autofluorescence of Human Skin
Current position: Quantitative Strategist, Field Street Capital Management, New York, NY
2. Halil Berberoğlu. PhD Thesis, July 2008.
Photobiological Hydrogen Production and Carbon Dioxide Mitigation
Current position: Thermal Engineer, Apple, Cupertino, CA
3. Ashcon Navid, PhD Thesis, August 2010.
Pyroelectric Energy Conversion for Waste Heat Harvesting
Current position: Engineering Program Manager, Intel Corporation, Portland, OR

4. Dmitry Yudovsky, PhD Thesis, December 2010.
   Spectroscopy of Multilayered Biological Tissues for Diabetes Care
   Current position: Founder and CTO, AlgoLIFT, Los Angeles, CA
5. Thomas Coquil, PhD Thesis, August 2011.
   Thermal and Optical Properties of Highly Ordered Mesoporous Materials for Energy Applications
   Current position: Founder and CEO, Homaj, Paris, France
6. Jin Fang, PhD Thesis, June 2012.
   Thermal Transport in Nanoporous Materials for Energy Applications
   Current position: Senior Development Engineer, Seagate, Minneapolis, MN
7. Euntaek Lee, PhD Thesis, March 2013.
   Light Transfer Simulation Tools in Photobiological Fuel Production
   Current position: Associate Professor, Kumoh National Institute of Technology, Gumi, Korea
8. Hainan Wang, PhD Thesis, Spring 2014.
   Modeling and Simulation of Electrical Energy Storage In Electrochemical Capacitors
   Current position: Senior Software Engineer, Zoom, San Jose, CA
9. Ian McKinley, PhD Thesis, December 2013.
   Thermomechanical Energy Conversion Using Ferroelectric Materials
   Current position: Thermal Engineer, Jet Propulsion Lab., Pasadena, CA
10. Razmig Kandilian, PhD Thesis, September 2014.
    Optimization and Control of Light Transfer in Photobioreactors for Biofuel Production
    Current position: Senior Thermal Engineer, Amazon, Los Angeles, CA
11. Yitong Zhao, PhD Thesis, June 2014 (co-chair with Prof. Chih-Ming Ho) – Bioengineering Department
    Optimizing Biofuel Production of a Cell-Free System by Feedback System Control Scheme
    Current position: Associate Professor, Cal Poly Pomona, CA
12. Ri-Liang Heng, PhD Thesis, December 2014.
    Radiation Characteristics of Biofuel-Producing Photosynthetic Microorganisms
    Current position: Managing Director, Wholly Green, Pte Ltd., Singapore
13. Anna d'Entremont, PhD Thesis, December 2015.
    Thermal Modeling of Electrochemical Capacitors
    Current position: Senior Engineer, Savannah River National Laboratory, SC
14. Alexander Thiele, PhD Thesis, June 2016.
    Chair: Laurent Pilon, Co-Chair: Gaurav Sant
    Microencapsulated Phase Change Composite Materials for Energy Efficient Buildings
    Current position: Manager, Exponent, Los Angeles, CA
15. Joseph Attia, PhD Thesis, June 2016.
    Transport Phenomena in Liquid Foams and Liquid Marbles Colloids
    Current position: Senior Engineering Manager, Northrop Grumman
16. Zhenhua Wei, PhD Thesis, June 2016.
    Chair: Gaurav Sant, Co-Chair: Laurent Pilon
    Durability of Cementitious Composites Containing Phase Change Materials (PCMs)
    Current position: Assistant Professor, Southern University of Science & Technology, Shenzhen, China
17. Bing-Ang Mei, PhD Thesis, June 2018.
    Continuum Modeling of Three-Dimensional Porous Electrodes of Electrochemical Capacitors

Current position: Associate Professor, Beijing Institute of Technology, China

18. Obaidallah Munteshari, PhD Thesis, July 2019.
Experimental Thermal Characterization of Electrochemical Capacitors
Current position: Assistant Professor, King Fahd University of Petroleum and Minerals

19. Ampol Likitchatchawankun, PhD Thesis, August 2020.
Heat Generation and Degradation Mechanisms in Electrochemical Capacitors
Current position: Assistant Professor, The Sirindhorn International Thai-German Graduate School of Engineering, Bangkok

20. Tiphaine Galy, PhD Thesis, September 2020.
Computational Material Synthesis and Electromagnetic Wave Scattering in Particle Aggregates and Mesoporous Monoliths and Films
Current position: Tesla Inc., San Francisco, CA

21. Eylul Simsek, PhD Thesis, December 2021
Radiation transfer through droplet-covered substrates: Simulations, Experiments, and Applications
Current position: Intel Corp., Phoenix, AZ

22. Sara Vallejo Castaño, PhD Thesis, March 2022
Clinkered-Free Route for Calcium Hydroxide Production and CO_2 Capture in Cementitious Materials
Current position: Research Engineer, WETSUS, European Centre of Excellence for Sustainable Water Technology, Leeuwarden, The Netherlands

23. Jack Hoeniges, PhD Thesis, June 2022
Modeling and Optimization of Light Transfer in Outdoor Microalgae Cultivation Systems
Current position: Research Engineer, Interstellar Lab, Paris, France

24. Sun Woong Baek, PhD Thesis, August 2022
Thermodynamic Characterization and Heat Generation of Fast-Charging Wadsley-Roth Shear Phase Materials for Battery Application
Current position: Professional Manager, SK Innovation, Seoul, South Korea

25. Ali Dashti, PhD Thesis, December 2022
Mechanical Characterization and Processing of Flexible and Transparent Ambiently-Dried Aerogels
Current position: Senior Process Engineer, Loliware, San Jose, CA

26. Matevž Frajnkovič, PhD Thesis, December 2022
Combining Calorimetry and Electrochemical Methods to Gain Insight Into the Charging Mechanisms of Electrochemical Capacitors and Batteries
Current position: Associate in Thermal Practice, Exponent, Los Angeles, CA

27. Abhinav Bhanawat, PhD student, started Fall 2020, ATC Ph.D., Fall 2021
Solar Radiation Transfer through Semitransparent Scattering Media across Length Scales
Current position: Post-doctoral scholar, Ecole Polytechnique Fédérale de Lausanne, Switzerland

28. Yucheng Zhou, PhD student, started Summer 2019, ATC Ph.D., Fall 2020
Operando Calorimetric Modality for Monitoring Rechargeable Batteries
Current position: UCLA

29. Ricardo Martinez, PhD student, started Fall 2021
Dependent Scattering in Colloidal Suspensions and Mesoporous Films and Monoliths
Current position: UCLA

30. Nicolas Leport, PhD student, started Fall 2021, ATC Ph.D., Fall 2023

Durability of Fast Battery Electrodes by Entropic Potential and Calorimetric Measurements
Current position: UCLA

31. Thomas Lee, PhD student, started Fall 2022
Radiation Characteristics, Thermal Management Strategies, and Evolution of Birds
Current position: UCLA

32. Aimeric Laperruque, PhD student, started Fall 2024
Current position: UCLA

MASTER OF SCIENCE WITH THESIS

1. Kamal M. Katika. M.S. Thesis, August 2004.
Modified Method of Characteristics in Radiative Transfer
Current position: Quantitative Strategist, Field Street Capital Management, New York, NY

2. Matthew M. Braun, M.S. Thesis, December 2004.
Effective Optical Properties of Nanoporous Thin-Films
Current position: Raytheon Corp., El Segundo, CA.

3. Damien Vanderpool, M.S. Thesis, July 2008.
Numerical and Experimental Study of a Pyroelectric Energy Converter for Harvesting Waste Heat
Current position: Technical Director, Thermal, ATA Engineering, Inc., El Segundo, CA.

4. Hiep Nguyen, M.S. Thesis, December 2009.
Pyroelectric Energy Converter Using Co-Polymer P(VDF-TrFE) and Olsen Cycle for Waste Heat Energy Harvesting
Current position: Senior Mechanical Design Engineer, Tesla, Fremont, CA.

5. Raylene Moreno, M.S. Thesis, September 2011.
Pyroelectric Energy Converter: Numerical Simulations vs. Experimental Results
Current position: Engineer, Parsons Brinckerhoff, Sacramento, CA

6. David Wirth, M.S. Thesis, June 2012.
Experimental Study on the Aerospace Applications of Photoreactive Nanomaterials
Current position: Doctoral Student, UC San Diego, CA

7. Felix Lee, M.S. Thesis, December 2012.
Experimental and Analytical Studies on Pyroelectric Waste Heat Energy Conversion
Current position: Director of Accident Reconstruction, National Biomechanics Institute, CA

8. Amanda Fujii, M.S. Thesis, December 2014.
Effect of Nanoporosity on the Thermal Conductivity of Amorphous Carbon
Current position: Engineer, Pacific Gas and Electric Co., Bay Area, CA

9. Henri-Louis Girard, M.S. Thesis, June 2015.
Modeling and Physical Interpretation of Pseudocapacitors under Cyclic Voltammetry
Current position: PhD student, Massachusetts Institute of Technology, MA

10. Alexander Ricklefs, M.S. Thesis, Winter 2016.
Thermal Conductivity of Cementitious Materials Containing Microencapsulated Phase Change Materials
Current position: Project Manager, The Energy Coalition, CA

11. Louis Z. Linden, M.S. Thesis, Winter 2017.
Energy Analysis for Producing Low-Carbon Footprint Cementitious Building Materials
Current position: Analyst, Southern California Edison, CA

12. Benjamin A. Young, MS student, Fall 2017
    Chair: Laurent Pilon, Co-Chair: Gaurav Sant
    Cementitious Materials with Embedded Microencapsulated PCM for Sustainable Infrastructure
    Current position: Lead Data Scientist, AlgoLIFT, CA

13. Zhenyu She, MS student, Spring 2018
    Chair: Laurent Pilon, Co-Chair: Gaurav Sant
    Early-Age Temperature Development in Concrete Pavements Containing Microencapsulated Phase Change Materials
    Current position: Ph.D. student, UCLA, Los Angeles, CA

MASTER OF SCIENCE WITH PROJECT

14. Howard Tseng, M.S., Sept. 2004.
    Rheology and Convective Heat Transfer in Colloidal Gas Aphrons
    Current position: Senior Team Leader, NASA Jet Propulsion Laboratory

15. Kyle D. Smith, M.S., July 2006.
    Maximum Time-Resolved Hemispherical Reflectance for Estimating the Scattering and Absorption Coefficients of Turbid Media
    Current position: Senior Project Engineer, ATA Engineering, Inc. San Diego, CA

16. Ashcon Navid, M.S., June 2007.
    Effect of Polarization on Effective Optical Properties of Nanocomposite Thin Films
    Current position: Research Engineer, Intel Corporation, Portland, OR

17. Soojung C. Hur, M.S., July 2007.
    Synthesis and Characterization of Mesoporous Thin-Films
    Current position: Assistant Professor, John Hopkins University, MD

18. Jennifer Blackwell, M.S., June 2007.
    In-vivo Time-Resolved Autofluorescence Measurements on Human Skin
    Current position: Senior Project Engineer, DexCom Inc., San Diego, CA

19. Brian James, M.S., June 2010.
    Comparison of Numerical Simulations Against Experimental Data of a Pyroelectric Energy Converter Using the Olsen Cycle
    Current position: Audit Engineer, Southern California Edison, Irwindale, CA

20. Herman Wong, M.S., June 2010.
    Effect of the Working Fluid on the Performances of Pyroelectric Waste Heat Energy Harvester Using Co-Polymer P(VDF-TrFE) and Olsen Cycle
    Current position: Senior Mechanical Engineer, GoPro, CA

21. Pedro Gomez, M.S., September 2010.
    Radiation Characteristics of Botryococcus braunii, Chlorococcum littorale, and Chlorella sp. Used For CO_2 Fixation and Biofuel Production
    Current position: Senior Product Manager, Amazon Worldwide ACES

22. Vincent Partusch, August 2016.
    Radiation Characteristics of Volvox
    Current position: *Product Support Engineer, Developer Technologies at OSIsoft*

23. Fadi Samaan, June 2022.
    Effect of Condensed Droplets on the Productivity of Outdoor Greenhouses

Current position: *Product Support Engineer, Developer Technologies at OSIsoft*

MY STUDENT ACHIEVEMENTS AND RECOGNITIONS

Ricardo Martinez (PhD 2024)
- 2021 Cotta Robles Fellowship

Eylul Simsek (PhD 2021)
- 2021 Outstanding Teaching Assistant Award – UCLA Mechanical and Aerospace Engineering Dept.

Bing-Ang Mei (PhD 2018)
- 2018 Sandra Williamson Scholarship – UCLA Mechanical and Aerospace Engineering Dept.

Aisha Kermiche (BSChemE 2018)
- 2017-19 University of California Leadership Excellence through Advanced DegreeS (UC LEADS) Scholar
- 2017 Outstanding Poster Presentation - the Annual Biomedical Research Conference for Minority Students

Christopher Perez (BSME 2017)
- 2017 Outstanding Bachelor of Science Degree in Mechanical Engineering Award.
- 2015 Summer RISE-UP Scholar
- 2015-2016 University of California CARE Scholar
- 2016-2017 Maximum Student Development Scholar

Alexander Thiele (PhD 2016)
- 2016 Finalist UCLA Grad Slam

Anna d'Entremont (PhD 2015)
- 2011 National Science Foundation Graduate Fellowship.
- 2015 Dimitris N. Chorafas Research Award.
- 2015-2016 UCLA Outstanding Ph.D in Mechanical Engineering Award.

Razmig Kandilian (PhD 2014)
- 2009-2010 UCLA Outstanding Bachelor of Science Degree in Mechanical Engineering Award.
- 2012-2013 Chateaubriand Fellowship from the French Embassy in the United States.

Amanda Fujii (MSME 2013)
- 2011-2012 UCLA Outstanding Bachelor of Science in Mechanical Engineering Award.

Ian McKinley (PhD 2013)
- Best Paper Award (2nd Prize) at the ASME 2012 3rd Micro/Nanoscale Heat & Mass Transfer International Conference, Atlanta March 3-6, 2012 (out of 140 papers).

Hainan Wang (PhD 2013)
- 2013 Chinese Government Award for Outstanding Self-Financed Students Studying Abroad.

Felix Lee (MSME 2012)
- Best Paper Award (2nd Prize) at the ASME 2012 3rd Micro/Nanoscale Heat & Mass Transfer International Conference, Atlanta March 3-6, 2012 (out of 140 papers).

David Wirth (MSAE 2012)
- 2010 ROTC Scholarship from the Armed Forces Communications and Electronics Association Educational Foundation.

Jin Fang (PhD 2012)
- 2011-2012 UCLA Outstanding PhD in Mechanical Engineering Award.

- 3rd place in poster competition at ASME Society-Wide Micro and Nano Technology Forum at ASME IMECE 2011, Denver, CO, November 11-17, 2011.

Gabriel Garcia (BSME 2012)
- 3rd Place in the 2010 UCLA RISE-UP poster competition.

Raylene Moreno (MSME 2011)
- 2010-2011 UCLA Graduate Opportunities Fellowship.
- 2010 UCLA Engineering Achievement Award for Student Welfare.

Dmitry Yudovsky (PhD 2010)
- 1st Place in the Biophysics Track at the 10th Annual Systemwide Bioengineering Institute of California Symposium, Merced, June 19-21, 2009.
- 3rd Place in the poster competition at the 2009 Veteran Administration Greater Los Angeles Healthcare System/UCLA 16th Annual Physical Medicine and Rehabilitation Service Residency Research Day for Physicians and Rehabilitation Professionals. Title: "*Evaluation of Diabetic Foot Ulcer Development with Hyperspectral Imaging of Oxyhemoglobin and Deoxyhemoglobin*" by D. Yudovsky, MS; T. Shiao DPM; A. Herrick DPM; L. Pilon, PhD; J. Thompson DPM; D. Aungst, DPM; A. Nouvong, DPM.

Brian James (MS 2010)
- 2012-2013 ASME Early Career Leadership Intern Program to Serve Engineering (ECLIPSE).

Neal Hutchinson (BSME 2009)
- 2nd Place in the 2008 UCLA RISE-UP poster competition.
- 2009 Harry M. Showman Prize♣ from UCLA School of Engineering and Applied Science.

Abubbakar Bah (BSME 2009)
- 1st Place in the 2008 UCLA RISE-UP poster competition.

Damien Vanderpool, MSME Thesis, July 2008.
- 2008 UCLA Outstanding Master of Science Degree in Mechanical Engineering Award.

Kancy Lee, BSME, June 2007.
- 2007 Harry M. Showman Prize♣ from UCLA School of Engineering and Applied Science.

Kamal M. Katika. MS Thesis, Aug. 2004.
- 2004 UCLA Outstanding Master of Science Degree in Mechanical Engineering Award.

♣The Harry M. Showman Prize is awarded to students who most effectively communicate the achievements, research, results or social significance of any aspect of Engineering to a student audience, the engineering professions, or the general public.

VISITING STUDENTS AND SCHOLARS

1. Dr. Flora Girard, GEPEA, University of Nantes, France Jan. 2022-June 2022
2. Dr. Refet Yalçin, Fullbright Fellow, University of Poitiers, Institut P', France Jan. 2021-Sept.2021
3. Dr. Galit Bar, Soreq Nuclear Research Center, Tel Aviv-Yafo, Israel July 2019-Jan. 2021
4. Chuanxin Zhang*, Harbin Institute of Technology, China Dec. 2017-Dec. 2018
5. An-Shen Siao, National Taiwan University of Science and Technology, Taipei Apr. 2017-Jan. 2018
6. Sara Vallejo-Castano, Universidad National de Colombia, Medellin, Colombia Jan. 2017-August 2017
7. Du Mu*, Xi'an Jiaotong University, Xi'an 710049, China Jan. 2017-Jan. 2018
8. Prof. Keyong Zhu*, Beihang University, Beijing, China Feb. 2016-Feb. 2017
9. Leonel Peña- Angeles (PhD student), Instituto Tecnológico de Monterey, Mexico Aug. 2015-May 2016
10. Shogo Okishio (MS student), Nagoya University, Japan Aug. 2015-Jan. 2016

11. Yucheng Jiao, Xi'an Jiaotong University, China	July 2015-Sept. 2015
12. Hua Li*, Harbin Institute of Technology, China	Oct. 2014-Sept. 2015
13. Astrid Jamet, Ecole Nationale de Travaux Public de l'Etat, France	April 2014- Aug. 2014
14. Bingang Mei, Zhejiang University, UCLA CSST	July. 2013- Sept. 2013
15. Luo Qi, Xi'an Jiaotong University, UCLA CSST	July. 2012- Sept. 2012
16. Dr. Hong Qi*, Harbin Institute of Technology (Visiting Professor CSC)	Sept. 2011- Sept. 2012
17. Dr. Julian Varghese, Texas A&M, College Station, TX (Post-doc)	Sept. 2009- Apr. 2011
18. Xin Cui*, University of Science and Technology, China	Oct. 2009- Aug. 2010
19. Allen Lin, Zhejiang University, China	July. 2010- Sept. 2010
20. Ian McKinley, Columbia University, New York, NY	June 2009- Aug. 2009
21. Jiafei Zhao*, Zhejiang University, PR China	Sept. 2007- Sept. 2008
22. Hugo Frederich, Grenoble Institute of Technology, France	June 2008-Aug. 2008
23. Fabien Gregoris, Grenoble Institute of Technology, France	June 2007-Aug. 2007
24. Sophie Larmignat, Grenoble Institute of Technology, France	June 2007-Aug. 2007
25. Dr. Bo Zhang*, Dalian University of Technology, PR China	Jan. 2007-July 2007
26. Dan Bai*, Shanghai Jiao Tong University	Jan. 2007-July 2007
27. Gauderic Lerouge, Institut Catholique des Arts et Metiers, Toulouse, France	Sept. 2006 – Jan. 2007
28. Rei Kitamura, Asahi Glass Corporation, Japan	Sept. 2005 - Sept. 2007
29. Dr. Juan Yin, University of California, Los Angeles	Nov. 2004- Nov. 2005
30. Samuel Prim, Grenoble Institute of Technology, France	March 2004-Sept. 2004
31. Helene Ruckenbusch, Grenoble Institute of Technology, France	June 2003-Sept. 2003

* supported by the China Scholarship Council

INTERNATIONAL PH.D. DISSERTATIONS

1. Jack Hoeniges, – Member of the PhD Committee (Membre du Jury). Université de Nantes, France, April 1, 2023.
2. Julien Louveau, *Étude et Optimisation de la Culture Solaire de Microalgues en Photoboréacteur Intensifié* – Certifying Referee (Rapporteur) for Ph.D. degree, Université de Nantes, France, March 15, 2023.
3. Flora Girard, *Microalgae-based Processes as A Solution to Support Sustainable Access to Food, Energy, and Eater in Urban Centers* – Certifying Referee (Rapporteur) for Ph.D. degree, Université de Nantes, France, 2021.
4. Saleh S. Baakeem, *Lattice Boltzmann Method for Single-Phase and Multiphase Systems,* PhD thesis certifying referee, University of Calgary, Canada, December 17, 2021.
5. Kashif Hussain Mangi, *Study of Hydrodynamics and Heat Transfer in the AlgoFilm Photobioreactor for Microalgae Production in Solar Conditions : Development of a Passive Thermal Regulation*, PhD thesis certifying referee, Université de Nantes, France, July 15, 2021.
6. Lindsey Dat Kay Yue, *Transport Phenomena in Particulate-Based Carbonate Systems Undergoing Chemical Looping*, PhD thesis certifying referee, Australian National University, Canberra, Australia, June 2018.
7. Michael Welte, *Solar Particle-Transport Reactor Technology for the Thermal Reduction of Ceria,* PhD thesis certifying referee, ETH Zurich, Switzerland, August 26, 2017.
8. Simon Guévelou, *Caractérisation des Propriétés Thermo-Radiatives de Mousses à Structure Numériquement Contrôlée :Vers le Design d'Absorbeurs Solaires,* PhD thesis certifying referee, Université de Nantes, France, December 11, 2015.
9. Razmig Kandilian, *Etude du Couplage entre Limitation Azotée et Transfert de Lumière pour la Production de Lipides par Microalgues en Photobioréacteur* – Member of the PhD Committee (Membre du Jury). Université de Nantes, France, July 23, 2015.

10. Jérémi Dauchet, *Analyse Radiative des Photobioréacteurs* – Certifying Referee (Rapporteur), University Blaise Pascal - Clermont Ferrand II, France, December 7, 2012.

DEPARTMENTAL, SCHOOL, CAMPUS, AND UNIVERSITY COMMITTEES

UNIVERSITY OF CALIFORNIA SYSTEM

- Faculty Advisory Committee of the UC Education Abroad Program (UCEAP) (member) 2012-2018
- University of California – Mexico Initiative (faculty participant) 2014-present

UNIVERSITY OF CALIFORNIA, LOS ANGELES

- UCLA Legislative Assembly (elected member) 2018-2021
- 2015-16 Faculty Career Development Award Selection Committee 2014-2015
- UCLA Legislative Assembly (elected member) 2006-2009

HENRY SAMUELI SCHOOL OF ENGINEERING AND APPLIED SCIENCE

- Boelter Visiting Professor Chair Committee (chair) 2016-2022
- Strategic Planning Committee (member) 2016-2017
- Dean's Selection Committee for Student Awards (member) 2010-2011
- 2010 Northrup Grumman Award for Excellence in Teaching (chair) 2010-2011
- 2009 Northrup Grumman Award for Excellence in Teaching (member) 2009-2010

MECHANICAL AND AEROSPACE ENGINEERING DEPARTMENT

- Awards and Honors Committee (Chair) 2021-2022
- Recruitment committee in Energy and Sustainability (chair) 2018-2019
- MAE Department Merit Increase Committee (elected member) 2018-2019
- Co-chair MAE Department Strategic Planning Committee 2018-2019
- MAE Department Strategic Planning Committee 2016-2018
- Heat and Mass Transfer Major Field Committee (chair) 2016-2019
- Ad Hoc Recruitment Committee for Prof. Timothy S. Fisher (chair) 2016-2017
- Recruitment committee in Aerospace (member) 2014-2015
- Ad Hoc Committee on Mathematics for Undergraduate (chair) 2013-2015
- Recruitment Committee in Heat and Mass Transfer (member) 2013-2014
- Merit Increase Committee (elected member) 2013-2014
- MAE ABET Accreditation Committee (member) 2012-2014
- Ad Hoc Committee on Opportunity Hire for Energy Research (member) 2012-2013
- MAE Dept. Thermal Science Faculty Position Recruitment Committee (chair) 2012-2013
- MAE Courses and Curriculum Committee (member) 2011-2013
- Heat and Mass Transfer Major Field Committee (chair) 2009-2013
- Energy Recruiting Committee (member) 2007-2008
- Seminar Committee (chair) 2006-2007
- MAE Department Library Liaison 2005-2006
- Strategic Planning Committee (member) 2003-2005
- Seminar Committee (member) 2002-2005
- Merit Increase Committee (observer) 2002-2003
- MEMS Major Field Committee (member) 2002-present
- Heat and Mass Transfer Major Field Committee (member) 2002-present

INSTITUTE OF THE ENVIRONMENT AND SUSTAINABILITY

- Advisory committee for the UCLA Leaders in Sustainability graduate certificate 2015-present

UCLA UNDERGRADUATE STUDENT ASSOCIATIONS

- Faculty Advisor for student organization Bruin Home Solutions 2017-2022
- Faculty Advisor for student organization UCLA Renewable Energy Association 2015-2022
- Faculty Advisor for the ASME Student Section 2010-2015

GRANTS

SUMMARY OF CONTRACTS AND GRANTS RECEIVED SINCE 2002

Funding agencies: National Science Foundation, Department of Energy (Basic Energy Science, ARPA-E), California Energy Commission, U.S. Air Force, Office of Naval Research, U.S. Department of Education, Seoul Viosys, Asahi Glass Corp., UCLA.
Total amount: $ 40,161,554
Pilon's lab share: $ 8,754,774

LIST OF CONTRACTS AND GRANTS

- **National Science Foundation – (CBET 2401080)** **$1,000,000**
  Project Title: RAISE: CET: Mesoporous Photonic Metamaterials to Control Radiative Heat Transfer in the Built Environment
  Performance date: August 1, 2024 – July 31, 2029
  Role: Co-PI (my share: $250,000) with Bruce Dunn, Sarah Tolbert, and PI Aswaath Raman

- **National Science Foundation –DMREF (DMR 2324326)** **$1,925,614**
  Project Title: DMREF: Design of Fast Energy Storage Pseudocapacitor Materials
  Performance date: September 1, 2023 – August 31, 2027
  Role: Co-PI (my share $400,000) with Bruce Dunn and PI Philippe Sautet (UCLA)

- **Lawrence Livermore National Laboratory** **$3,500,000**
  Project Title: Advanced Energy Storage for Extreme Conditions (AESTEC)
  Performance date: October 1, 2022 – September 30, 2025
  Role: Co-PI (my share: $300,000) with Bruce Dunn and PI M. Worsley (LLNL)

- **UCLA California NanoSystem Institute, Noble Family Innovation Funds** **$250,000**
  Project Title: Aerogel-based Metamaterial Selective Thermal Emitters for Radiative Cooling of Windows
  Performance date: July 1, 2022 – June 31, 2024
  Role: Co-PI (my share: $62,500) with Sarah H. Tolbert, Bruce Dunn and PI Aaswath Raman

- **US Department of Energy, Basic Energy Science (DE-FG02-09ER46580)** **$9,750,000**
  Project Title: Energy Frontier Research Center – Center for Synthetic Control Across Length-scales for Advancing Rechargeables (SCALAR)
  Performance date: Aug. 1, 2018 – July 31, 2024
  Role: Co-PI (my share: $475,000) with Prof. Sarah H. Tolbert, Principal Investigator

- **National Science Foundation (Award No. DGE- 1735325)** **$3,000,000**
  Project Title: NRT-INFEWS: Integrated Urban Solutions for Food, Energy, and Water Management
  Performance date: Sept. 1, 2017 – August 31, 2023
  Role: Principal Investigator and Program Director

- **Advanced Research Projects Agency-Energy (ARPA-E) SHIELD Program (Award No. DE-AR0000738 - Extension)** **$ 2,000,000**
  Project Title: Thermally Insulating Transparent Barrier (THINNER) Coatings for Single-Pane Windows

Performance date: January 1, 2019 – May 31, 2022
Role: Principal Investigator with co-PI Bruce Dunn, Sarah Tolbert, and Yongjie Hu

- **UCLA Vice Chancellor for Research – Competitive seed money for MRSEC** **$ 10,000**
  Project Title: IRG: Center for Multifunctional Nanoporous Materials
  Performance date: Sept. 1, 2018 – August 31, 2019
  Role: co-PI with Bruce Dunn, Sarah Tolbert (Principal Investigator), and Jane Chang ($40,000 total)

- **French National Center for Scientific Research (CNRS)** **21,000** €
  Project Title: Projet International de Coopération Scientifique (*PICS*) : AlgaeRad
  Performance date: October 1, 2017 – September 30, 2020
  Role: Co-Principal Investigator with PI Prof. J. Pruvost (University of Nantes, France)

- **U.S. Department of Energy – National Energy Technology Laboratory (Award No. DE- FE 0029825)** **$ 999,999**
  Project Title: Upcycled 'CO2-Negative' Concrete for Construction Functions
  Performance date: April 1, 2017 – March 30, 2020
  Role: Co-Principal Investigator with PI Gaurav Sant ($750,000 UCLA portion)

- **Advanced Research Projects Agency-Energy (ARPA-E) SHIELD Program (Award No. DE-AR0000738)** **$ 1,278,011**
  Project Title: Thermally Insulating Transparent Barrier (THINNER) Coatings for Single-Pane Windows
  Performance date: January 1, 2017 – December 31, 2018
  Role: Principal Investigator with co-PI Bruce Dunn, Sarah Tolbert, and Yongjie Hu

- **European Union (7th RTD Framework Programme, Award No.20145521)** **1,350,000** €
  Project Title: ECLIPS: Enhancing Concrete Life in Infrastructure Through Phase Change Systems. Infravation
  Performance date: July 1, 2015 – November 30, 2017
  Role: PI: N. Neithalath (ASU), co-PI: Gaurav Sant and L. Pilon (UCLA) ($329,000 UCLA portion)

- **UCLA CCLE Innovation and Development Program** **$ 11,545**
  Project Title: Assessing and Improving Engineering Students' Math Skills
  Performance date: June 30, 2015 – June 30, 2016
  Role: Principal Investigator with Orachat Chieu

- **UCLA Instructional Improvement Development Program** **$ 23,076**
  Project Title: Improving Engineering Students' Math Skills
  Performance date: January 1, 2015 – June 30, 2016
  Role: Principal Investigator

- **UC-Mexus – CONACYT Collaborative Grant (Award No: 20143752)** **$ 25,000**
  Project Title: Photobiological CO_2 Capture and Fuel Production for the Cement Industry
  Performance date: Sept. 1, 2014 – December 31, 2015
  Role: Principal Investigator with Prof. R. Parra-Saldívar (Instituto Tecnológico de Monterrey, Mexico)

- **Seoul Viosys a subsidiary of Seoul Semiconductors, Seoul, South Korea** **$ 200,000**
  Project Title: Multispectral Imaging Device for Personalized Skin Care – Phase 1
  Performance date: June 1 2014 - June 2015
  Role: Principal Investigator

- **California Energy Commission – PIERS Program (Award No: PIR-12-032)** **$ 319,780**
  Project Title: *Tools and Materials for Zero Net Energy California Buildings*
  Performance date: July 2013-March 2017

Role: Co-Principal Investigator with M. Milne (P.I.), R. Ligett, G. Sant (total: $1,335,074)

- **ERC Incorporated, California Operation, Edwards Air Force Base, CA $ 30,000**
  Project Title: *Photo-Ignition of Encapsulated Carbon Nanotubes for Propulsion Applications*
  Performance date: March 2012-December 2012
  Role: Principal Investigator

- **US Air Force – Defense University Research Instrumentation Program (DURIP) $ 40,000**
  Project Title: *Advanced Rocket Propulsion Systems*
  Performance date: March 2012-December 2012
  Role: Co-Principal Investigator with Dr. Ann Karagozian, Principal Investigator (total: $390,000)

- **UCLA Council on Research - Faculty Research Grant $10,000**
  Project Title: *Hyperspectral Imaging for Predicting Diabetic Foot Ulcer Development Risk*
  Performance date: July 2010 - June 2011
  Role: Principal Investigator with Dr. Aksone Nouvong, Co-Principal Investigator

- **National Science Foundation (Award No. 0969033) $346,012**
  Project Title: *CSEDI: Thermal Conductivity of Lower Mantle Minerals and Heat Flow Across the Core/Mantle Boundary*
  Performance date: June 1, 2010 – May 30, 2013
  Role: Co-Principal Investigator with Prof. A. Kavner, Principal Investigator

- **US Air Force – SBIR Phase II (Award No. 90149) HyperComp, Inc., Thousand Oaks, CA $150,000**
  Project Title: *Efficient Multi-Scale Radiation Transport Modeling – Phase II*
  Performance date: February 1, 2009 – January 31, 2011
  Role: UCLA Principal Investigator with lead PI Dr. R. Manupali Hypercomp (total: $1,000,000)

- **National Science Foundation, Award DGE-0903720 $599,112**
  Project Title: *IGERT: Clean Energy for Green Industry at UCLA*
  Performance date: July 1, 2009 – June 30, 2014
  Role: Co-Director with Prof. D. Huffaker, Director (total: $2,995,563)

- **US Department of Energy, Basic Energy Science (DE-FG02-09ER46580) $795,000**
  Project Title: *Energy Frontier Research Center - Molecularly Assembled Material Architectures for Solar Energy Production, Storage and Carbon Capture*
  Performance date: Aug. 1, 2009 – July 31, 2014
  Role: Co-Principal Investigator with Prof. V. Ozolin, Principal Investigator ($11,500,000 total)

- **US Air Force – SBIR Phase I (Award No. 90149) with HyperComp, Inc., Thousand Oaks, CA $30,000**
  Project Title: *Efficient Multi-Scale Radiation Transport Modeling – Phase II*
  Performance date: Sept. 1, 2008 – May. 31, 2009
  Role: Co-Principal Investigator with Prof. A.R. Karagozian, Principal Investigator

- **University of California Energy Institute $35,000**
  Project Title: *Waste Heat Harvesting From Power Generation and Transportation Systems*
  Performance date: Sept. 30, 2008 – Aug. 31, 2009
  Role: Principal Investigator

- **HyperMed, Inc., Burlington, MA $34,696**
  Project Title: *Pattern Classification and Data Mining on Hyperspectral Imaging of the Diabetic Foot for Prediction of Ulcer Formation and Healing*
  Performance date: Sept. 30, 2008–Dec. 31, 2008

Role: Principal Investigator

- **Alticor - Access Business Group** **$25,000**
  Project Title: *Fluorescence of Human Skin to Assess Advanced Glycated End-Products Breaker*
  Performance date: July 1st, 2008 – June 30, 2009
  Role: Principal Investigator

- **U.S Office of Naval Research (Award N000140710671)** **$300,000**
  Project Title: *Nanoporous Pyroelectric Materials for Direct Energy Conversion of Waste Heat Into Electricity*
  Performance date: June 1, 2007 – May 31, 2010
  Role: Principal Investigator

- **Diabetes Action Research and Education Foundation** **$15,000**
  Project Title: *Time-Resolved Photometric Device for Detecting and Monitoring Diabetes*
  Performance date: August 1, 2006-July 31, 2007
  Role: Principal Investigator

- **The American Chemical Society - Petroleum Research Fund (PRF# 43166-G9)** **$35,000**
  Project Title: *Morphology of Colloidal Gas Aphrons: Is There an Aqueous Shell?*
  Performance date: July 1, 2005- June 30, 2007
  Role: Principal Investigator

- **University of California, Toxic Substance Research and Teaching Program** **$50,000**
  Project Title: *New Photometric Device for Assessing Toxicity of Nanoparticles*
  Performance date: July 1, 2005 - June 30, 2007
  Role: Advisor of Graduate Student Fellowship for PhD Student Kyle Smith

- **UCLA Council on Research - Faculty Research Grant** **$6,000**
  Project Title: *Non-Invasive Detection of Type 2 Diabetes Mellitus*
  Performance date: July 2005 - June 2006
  Role: Co-Principal Investigator with Prof. K. Dipple, Principal Investigator

- **Asahi Glass Corporation Research Center, Yokohama, Japan** **$60,000**
  Project Title: *Research on Glass*
  Performance date: September 2005-September 2007
  Role: Principal Investigator

- **National Science Foundation CAREER Award (NSF CTS0449429)** **$400,132**
  Project Title: *Synthesis, Characterization, and Modeling of Closed-Cell Nanoporous Media*
  Performance date: July 1, 2005-June 30, 2010
  Role: Principal Investigator

- **Firer-Fighter, LLC – Pomona, CA** **$6,500**
  Project Title: *Feasibility Study of a Deployable Fire Safety System for Home and Residential Building*
  Performance date: January 2005- June 2005
  Role: Principal Investigator

- **California Energy Commission - Energy Innovative Small Grant (EISG 53723A/03-29)** **$74,498**
  Project Title: *Biosolar Conversion of Carbon Dioxide into Hydrogen via Bacteria Embedded in Colloidal Gas Aphrons*
  Performance date: November 2004-November 2005
  Role: Principal Investigator

- **UCLA Lab2Market Fund** **$25,000**
  Project Title: *Non-invasive time-resolved photometric device for detecting diabetes*
  Performance date: August 2004-December 2005
  Role: Principal Investigator

- **U.S. Department of Education** **$581,940**
  Project Title: *Graduate Assistance in Areas in National Need (GAANN) in Mechanical Engineering*
  Performance date: August 2004 - August 2007
  Role: Co-Principal Investigator with Prof. H.T. Hahn, Principal Investigator

- **University of California Energy Institute** **$35,200**
  Project Title: *Aluminum microfoams to increase fuel efficiency and reduce pollutant emission of transportation systems*
  Performance date: July 2003 – December 2005
  Role: Principal Investigator

- **Glass Manufacturing Industrial Consortium G-Plus Project** **$25,000**
  Project Title: *Foaming of E-glass*
  Performance date: June 2003 – September 2003
  Role: Co-Principal Investigator with D.-S. Kim (Pacific Northwest National Lab), Principal Investigator

- **UCLA Faculty Grant Program** **$5,000**
  Project Title: *Effect of gases and atmosphere conditions on liquid foam formation and stability*
  Role: Principal Investigator

- **NSF-sponsored Faculty Career Development Workshop** **$600**

LANGUAGES

- French: native
- English: fluent
- Spanish: conversational

REFERENCES

- Available upon request