

# Parthiban Santhanam

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- OBJECTIVE** A position developing emerging opto-electronic technologies.
- EDUCATION, TRAINING, AND WORK EXPERIENCE**
- Stanford University**, Stanford, CA (Apr. 2014 to Sep. 2015, Mar. 2016 to present)  
*Postdoctoral Fellow* in Electrical Engineering, Sponsor: Prof. Shanhui Fan  
Topic: Semiconductor opto-electronic devices for energy conversion
- Exergy Dynamics, Inc.**, Redwood City, CA (Sep. 2015 to Mar. 2016)  
Sole founder startup commercializing phonon recycling LEDs
- Massachusetts Institute of Technology**, Cambridge, MA (2006 to 2014)  
*Doctor of Philosophy* in Electrical Engineering, Advisor: Prof. Rajeev Ram  
“Thermo-electrically pumped semiconductor light emitting diodes”  
*Master of Science* in EECS, Advisor: Prof. Rajeev Ram  
“Generalized drift-diffusion for microscopic thermoelectricity”
- University of California–Berkeley**, Berkeley, CA (2002 to 2006)  
*Bachelor of Science* in Engineering Physics, Minor: EECS  
GPA: 3.89/4.00
- SELECTED PATENT APPLICATIONS AND FIRST AUTHOR PAPERS**
- P Santhanam**, D J Gray, Jr., and R J Ram. “Phonon-recycling [*sic*] light-emitting diodes.” Patent No.: US 9,557,215 B2. Date of Patent: January 31, 2017.
- P Santhanam** and Shanhui Fan, “Thermal-to-electrical energy conversion by diodes under negative illumination.” *Physical Review B* **93**, 161410(R), Apr 2016.
- P Santhanam**, et al. “Thermoelectrically pumped light-emitting diodes operating above unity efficiency.” *Physical Review Letters* **108**, 097403, Feb 2012.
- J Bahk, **P Santhanam**, et al. “Resonant carrier scattering by core-shell nanoparticles for thermoelectric power factor enhancement.” *Applied Physics Letters* **100**, 012102, Jan 2012.
- COMPUTER SKILLS**
- Languages*: MATLAB, C++, Scheme; general comfort with procedural languages.  
*OSs and Development Environments*: Win/Mac/Linux, Microsoft Visual C++, Emacs.  
*Hardware Experience*: IT administrator for research group (3 years).
- OTHER EXPERIENCE**
- Co-wrote two research proposals, one funded (100k\$/yr) by Weatherford Int’l.  
Delivered technical presentations at major scientific conferences  
Invited talks at both 2013 and 2014 Photonics West.  
Gave interview with *Physics World* about 2012 paper in *Physical Review Letters*.  
Teaching Assistant for MIT 6.003: Signals and Systems.  
Research mentor for three junior students  
D J Gray, Jr. at MIT (BS 2010, MEng 2011, currently at Stanford EECS),  
D Huang at MIT (BS 2013, currently at UC Santa Barbara ECE),  
K Chen at Stanford (BS 2013, currently at Stanford Applied Physics).