

## AVS Recognition for Excellence in Mentorship Nomination

### Nominee

#### Suntharampillai “Theva” Thevuthasan

Environmental Molecular Sciences Laboratory (EMSL) at PNNL, Richland WA

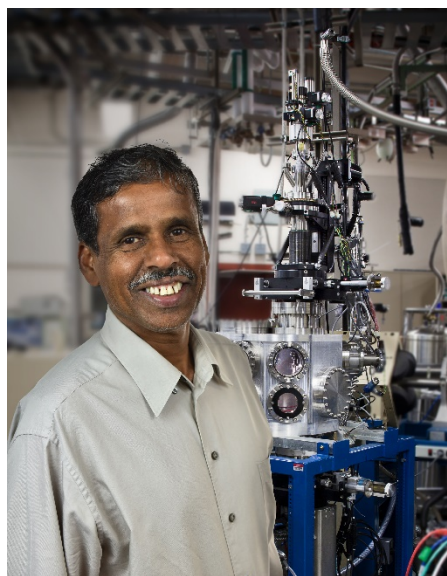
[Theva@pnnl.gov](mailto:Theva@pnnl.gov)

[PNNL biography](#)

[EMSL biography](#)

[Google Scholar](#)

**Photograph of Theva with some ultra-high vacuum equipment that he used in his research and on which he trained students. (photo jpg file sent separately)**



### Short Summary of Scientific Accomplishments

Theva’s research has focused on surface structures of pure and adsorbate-covered single crystal surfaces, thin film and interfacial characterizations using X-ray photoelectron spectroscopy/diffraction, photoelectron holography, and high-energy ion beam techniques. He has contributed to the understanding of synthesis and characterization of nanomaterials, ionic transport processes in single and multilayer oxide thin-film electrolytes, growth and characterization of oxide thin films, and the understanding of radiation effects in ceramics and oxides. Much of his recent work has focused on the development of battery material, nanoparticles, and other nanostructured materials. In addition to his research efforts, he has held several group leadership positions with responsibilities for developing staff

and instrumental capabilities as part of the EMSL U.S. Department of Energy (DOE) User Facility. He was one of the initial EMSL staff members and helped design EMSL capabilities. He is now working with other researchers at PNNL to design a next generation laboratory for catalysis and energy materials research. Google Scholar reports that he has over 300 research publications and more than 11,000 citations. In 2010 he was recognized as an AVS Fellow.

### **Summary of Mentoring Activities**

Summarizing Theva's mentoring activities is a significant challenge. He has received two mentoring related awards from PNNL, a PNNL Fundamental Science Directorate Chet Cooper Mentoring Award for his work with postdocs in 2002 and a PNNL Fitzner-Eberhardt Award for contributions to science and engineering education in 2010 for his mentoring activities. In the 2010 nomination, more than 60 mentees were identified (with at least 20 more since then, it is hard to count) and quotes from many of them were included in the nomination for that award. This 2010 nomination package is provided as an attachment to this nomination. Consistent with his interest in developing the next generation of scientists, he is a long serving member of the AVS education committee, having served as a short course chair, he has served and is currently a member of Ph.D. committees (as a non-university participant) and frequently serves as a judge for the regional science fair.

He has mentored at multiple levels, high school students, undergraduates (including students from disadvantaged community colleges), graduate students, high school teachers, postdocs, and PNNL staff members. Their comments include "I have had other mentors, but none have exhibited such enthusiasm, devotion and confidence as Theva" and "importantly for me as a student intern, he is approachable, kind and adept at explaining scientific concepts." Giving mentees hands-on research experience often included the opportunity for them to write and prepare posters on the work they did with Theva and entered a variety of student poster competitions. Many of his mentees have won awards, including undergraduates and graduate students who have won poster competitions at local and national meetings, national student awards, outstanding postdoc awards, and DOE Early Career awards. In his mentoring of PNNL staff members, he encourages them to mentor as well and he serves as a backup when they are not available.