

Semra Tan, PhD.



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Education

- **PhD:** Middle East Technical University (METU), Department of Polymer Science and Technology, 2008 (3.71/4.00)
- **MSc:** METU, Department of Polymer Science and Technology, 2003 (3.93/4.00)
- **BSc:** METU, Department of Chemistry, 2000 (2.94/4.00)
- **Minor Program:** METU, Department of Metallurgical and Materials Engineering, 2000 (3.33/4.00)

Research Areas

Energy storage materials, Li-ion batteries, 3D microbatteries, Ni-MH batteries, thin and flexible batteries, polymer electrolytes

Work Experience

Scientific Programs Expert

December 2016 -

TÜBİTAK- SAVTAG, Ankara

Instructor

Jan.2016-Jun.2016

METU Northern Cyprus Campus, Turkish Republic of Northern Cyprus

Post Doctoral Researcher

Oct. 2014-Jan.2016

Dep. of Metallurgical and Materials Engineering, METU, Ankara

- Electrochemical testing of Ni-MH batteries based on core shell materials for hydrogen storage

Owner of a start-up company

Apr.2013-Agus.2014

Antalya

- Development of thin and flexible alkaline batteries, *supported by Ministry of Science, Industry and Technology*

Post Doctoral Researcher

Sep.2009 - Sep.2011

Ångström Advanced Battery Centre, Uppsala University, Sweden

- Development of all solid state polymer electrolytes for both 3-D Li-ion microbatteries and Li-ion batteries with advanced cathode materials
- Co-supervisor of three graduate students (S. Walus, J. Du ve I. Liao) with Dr. Daniel Brandell

Research Assistant

Jan.2001 –Mar. 2007

Department of Chemistry, METU, Ankara

- Teaching in general, advanced and physical chemistry laboratories
- Conducting research on properties and characterization of aluminum hydroxide and barium sulfate filled polypropylene copolymer
- Conducting research on characterization of serpentine filled polypropylene

Journal Publications

- “**Activation behavior of an AB₂ type metal hydride alloy for NiMH batteries**”, [Semra Tan](#), Yang Shen, Ezgi Onur Şahin, Dag Noreus, Tayfur Öztürk, International Journal of Hydrogen Energy, 2016, 41(23), 9948.
- “**Solid polymer electrolyte coating from a bifunctional monomer for three-dimensional microbattery applications**”, Bing Sun, I-Ying Liao, [Semra Tan](#), Tim Bowden, Daniel Brandell, Journal of Power Sources, 2013, 238, 435.
- “**Solid state 3-D microbattery based on nano-pillar Cu₂Sb anodes**”, [Semra Tan](#), Emilie Perre, Torbjörn Gustafsson, Daniel Brandell, Solid State Ionics, 2012, 225, 510.
- “**A Study on Nanofiller Effects of Serpentine in Polypropylene Matrix**”, [Semra Tan](#), Teoman Tinçer, Journal of Applied Polymer Science, 2012, 124, 1419.
- “**3-D Microbattery Electrolytes by Self-Assembly of Oligomers**”, [Semra Tan](#), Sylwia Walus, Torbjörn Gustafsson, Daniel Brandell, Solid State Ionics, 2011, 198, 26.
- “**Preparation and Characterization of Polypropylene/Serpentine Composites**”, [Semra Tan](#), Teoman Tinçer, Journal of Applied Polymer Science, 2011, 121(2), 846.
- “**Flammability and Mechanical Properties of Al(OH)₃ and BaSO₄ Filled Polypropylene**”, [Semra Tan](#), Teoman Tinçer, Journal of Applied Polymer Science, 2010, 118(5), 3034.
- “**Poly(ether amine) and cross-linked poly(propylene oxide) diacrylate thin-film polymer electrolyte for 3D-microbatteries**”, [Semra Tan](#), Sylwia Walus, Jöns Hilborn, Torbjörn Gustafsson, Daniel Brandell, Electrochemistry Communications, 2010, 12(11), 1498.

Conference Presentations

- “**Activation of an AB₂ negative electrode material for Ni-MH battery**”, [Semra Tan](#), Yang Shen, Ezgi Şahin, Dag Noreus, Tayfur Öztürk, mESC-IS 2015, International Symposium on Materials for Energy Storage and Conversion, Ankara, Turkey 2015.
- “**Polymer Electrolytes for Li₂FeSiO₄-Based Li-ion Batteries**”, Bing Sun, [Semra Tan](#), Torbjörn Gustafsson, Daniel Brandell, International Conference on Solid State Ionics, Warsaw, Poland 2011.
- “**Synthesis of Comb-Polymethacrylate/Poly(ethylene oxide) Electrolytes for Li-ion Batteries**”, Juan Du, [Semra Tan](#), Tim Bowden, Daniel Brandell, International Conference on Solid State Ionics, Warsaw, Poland 2011.
- “**Cross-linked Oligomer-Based Electrolytes for 3D-Microbatteries**”, [Semra Tan](#), Tim Bowden, Torbjörn Gustafsson, Daniel Brandell, International Conference on Solid State Ionics, Warsaw, Poland 2011.
- “**Electrolytes for 3D-Microbatteries using Self-Assembly and Cross-Linking of Oligomer Blends**”, [Semra Tan](#), Sylwia Walus, Torbjörn Gustafsson, Daniel Brandell, XII International Symposium on Polymer Electrolytes (ISPE-12) Padova, Italy 2010.
- “**3-D Microbattery Electrolyte by Self-Assembly of Oligomers**”, [Semra Tan](#), Daniel Brandell, Torbjörn Gustafsson, IMLB 2010 - The 15th International Meeting on Lithium Batteries, Montreal, Canada 2010.
- “**Synthesis and Electrochemical Properties of LiCr_{0.2}Ni_{0.4}Mn_{1.4}O₄ Spinel as 5V Cathode Material**”, Serdar Tan, Sara Malmgren, [Semra Tan](#), IMLB 2010 - The 15th International Meeting on Lithium Batteries, Montreal, Canada 2010.
- “**A Study on Thermal and Mechanical Properties of Mechanically Milled HDPE and PP**”, [Semra Tan](#), Serdar Tan, Proceedings of 3rd Balkan Metallurgy Conference, Ohrid, Republic of Macedonia 2003, pp 310-315.

National Conference Presentations

- “Serpentin Mineraliyle Güçlendirilen Polipropilenin Mekanik ve Morfolojik Özellikleri”, Semra Tan, Teoman Tinçer, II. National Polymer Science and Technology Congress and Exhibition, Harran University, Şanlıurfa 2008.
- “Al(OH)₃ ve BaSO₄ Katkılı Polipropilen Kopolimerinin Özellikleri ve Karakterizasyonu”, Semra Can, Teoman Tinçer, XVI. National Chemistry Conference, Selçuk University, Konya 2002.