

Dr. Pol Vilas G.

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URL: http://www.cse.anl.gov/Staff/Electrochemical_Energy_Storage/Vilas_CV_CSE.pdf



OBJECTIVE

To pursue a scientific career in the field of Synthesis of fascinating inorganic nanomaterials for their applications in the energy storage and energy converting systems

RESEARCH AND PROFESSIONAL EXPERIENCE

Argonne Scholar (Director's Postdoc Fellow) (2008), CSE, ANL, USA

Advisor: **Dr. M. M. Thackeray** (*Distinguished Scientist*)

Topic: Execution of safe *rechargeable lithium ion batteries* using novel electrode nanomaterials synthesized via a *pioneering route*

Postdoc Fellow (2007), IPNS- 360, ANL, USA.

Advisor: **Dr. P. Thiagarajan**

Topic: Synthesis and characterization of hybrid diblock copolymer nanocomposites with *ordered arrays of inorganic nanoparticles*

Postdoc Fellow (2005-2006), Chemistry Dept., Bar-Ilan University, 52900, Israel

Advisor: **Prof. A. Zaban**

Topic: Synthesis of various nanomaterials and their implementation in *dye sensitized solar cells*

EDUCATION

Ph. D. Center for Advanced Materials and Nanotechnology, (2001-2005)

University of Bar-Ilan, Ramat-Gan-52900, **Israel**

Thesis: Sonochemical deposition of various nanoparticles on silica spheres and its structural, morphological and optical study

Advisor: **Prof. A. Gedanken**

M. Phil. Chemistry Department, University of Pune, India (1996-99)

Thesis: Chemical effects produced by oxidizing species generated and annealed by different means in ammonium perchlorate

Advisor: **Prof. V. G. Dedgaonkar**

M. Sc. (Inorganic Chemistry), University of Pune, India (1994-96)

B. Sc. (Chemistry), University of Pune, India (1991-94)

DIPLOMAS: i) Diploma in Computer Management, ii) DLL & LW, and iii) Diploma in Total Quality Management & ISO 9000 obtained with distinction.

AWARDS

* 'Intel Prize' for outstanding *poster presentation* by 25th IVS conference, Israel [2006]

* Honored "Director's postdoc fellowship" at Los Alamos National Laboratory, USA [2007], declined

* 'President Fellowship' for Ph.D. [2001]

* Ranked first in 'Scientific writing' course [Scored 94/100]

* 'Best Student Award' honored by All Maharashtra state student welfare association, India [2000]

* 'Silver Medal' for outstanding research presentation, India [1999]

* Ranked First in National council for training and vocational training, Government of India [2001]

* 'Gold Medalist' of DRDO Sports Board, India in Kabaddi [2000]

HONORS

- ❖ Editorial board member of “Carbon Science and Technology” <http://www.applied-science-innovations.com/cst-web-site/cst-editorial%20board.html>
- ❖ Editorial advisory board member of “The Open Ceramic Science Journal” <http://www.bentham.org/open/tocersj/EBM.htm>
- ❖ Editorial advisory board member of “The Open Colloid Science Journal” <http://www.bentham.org/open/tocollsj/EBM.htm>
- ❖ **Membership:** Materials Research Society(MRS), American Crystallographic Association (ACA), Neutron Scattering Society of America (NSSA), Israel Chemical Society(ICS), Israel Vacuum Society (IVS), Israel Society for Microscopy (ISM)
- ❖ **Reviewer of:** Chemistry of Materials, Langmuir, Inorganic Chem., Materials Chemistry and Physics, Journal of Physical Chemistry, Industrial & Engineering Chemistry Research, Materials Research Bulletin, Journal of Non-Crystalline Solids, Physics Letters A, Central European Journal of Chemistry, Nanoscale Research Letters, Journal of Crystal Growth and Design.
- ❖ **Worldwide Scientific collaborations**
Dr. Ariga Katsuhiko (Director of MANA, Japan), Prof. Vadim Kessler (SLU, Sweden), Prof. Israel Felner (Hebrew Uni., Israel), Prof. Shigeo Asai (Nagoya Uni., Japan), Prof. A.K. Nikumbh (Pune Uni., India), Prof. Dov Sherman (Technion, Israel), Prof. J. Calderon Moreno (Uni. Politech Catal., Spain) Prof. Mashahiro Yoshimura (Japan), Prof. G. Churilov (Russia) and Prof. Tingying Zeng (MIT, USA).

PATENTS AND INVENTIONS

1. A Process for remediation of plastic waste into technologically important novel carbonaceous materials
Inventors: **Vilas G. Pol** & P. Thiyagarajan, ANL-IN-07-070
2. A novel synthesis of high surface area nanosized silicon carbide
Inventors: **Vilas G. Pol** & A.Gedanken US 60/667,775
3. Single-step synthesis of tungsten and silicon carbides nanorods
Inventors: **Vilas G. Pol**, S. Shanmugam & Aharon Gedanken, US 60/704,880

BOOK CHAPTERS

1. **V. G. Pol**, S.V. Pol and A. Gedanken, “Properties of Nanostructured Metal Oxides Synthesized by the RAPET Approach” *Metal Oxide Nanostructures and Their Applications*” American Scientific Publishers, 25650 North Lewis Way, Stevenson Ranch, California 91381, USA, 2008.
2. **V. G. Pol**, S.V. Pol and A. Gedanken, “A precursor decomposition method for the fabrication of carbon-related materials,” *Recent Research Activities of Micro- and Nano-Scale Carbon Related Materials*, Transworld Research Network, India, Edited by Hiroaki Miyagawa, 2008,163-194.

REVIEWS

- 1) **V. G. Pol**, S. V. Pol, A. Gedanken, “One-Step Synthesis and Characterization of SiC, Mo₂C and WC Nanostructures” *Eur. J. Inorg. Chem.* 2009, 709–715.
- 2) **V. G. Pol**, S. V. Pol, A. Gedanken, “Semiconducting, magnetic or superconducting nanoparticles encapsulated in carbon shells by RAPET method”, *Carbon – Sci. Tech.* 2008, 1, 46.
- 3) **V. G. Pol**, S.V. Pol and A. Gedanken, Pol, “Fabrication of magnetic nanoparticles using the RAPET technique with or without employing an external magnetic field”, *J. Phys. Chem. C*, 2008, 112, 6627.

RESEARCH NEWS

- 1) New lease of life for used cola bottles (Pol et al., *Chem. Sci.* 2009, 6, C19)
http://www.rsc.org/Publishing/ChemScience/Volume/2009/03/New_lease_of_life_for_used_cola_bottles.asp

RESEARCH HIGHLIGHTS

- Published **32 first** authored and rest coauthored papers in peer-reviewed journals.
- ISI citations to my research articles are more than **900** in high impact publications, **h-index =17**.
- Developed **RAPET** (Reactions under Autogenic Pressure at Elevated Temperature) an innovative **scalable** synthetic process for the fabrication of fascinating nanomaterials.
- As a part of the team supported the **NACBO** project [2004-2006]. NACBO is the project acronym for Novel and Improved Nanomaterials, Chemistries and Apparatus for Nano-Biotechnology, supported by EU sixth framework program.
- Synthesized novel TiO_2 @Carbon nanocomposites for **General Motors** (GM) project.
- Expertise in Sol-gel, Sonochemical, Microwave, Electrospinning, Hydrothermal, Solid-state, CVD etc. **synthetic** techniques.
- Presented research work in **20** international and **15** national conferences
- **13 Invited talks** are given internationally, includes Germany, Italy, Israel, India and USA

SKILLS

SAXS, SANS, XPCS, Powder X-ray diffraction, Transmission electron microscope, Scanning electron microscope, UV-Vis., FT-IR & Raman spectroscopy, Thermal (TGA, DTA and DSC) analysis, BET surface area analysis, Electron spin resonance, magnetic measurements, and handling of inert gas glove box systems.

LIST OF PUBLICATIONS (since 2002)

First authored 32 articles

71. **V. G. Pol**, J. Calderon-Moreno, P.Thiyagarajan, Facile synthesis of novel photoluminescent ZnO micro and nano pencils", *Langmuir*, 2008, 24, 13640.
70. **V.G. Pol**, E. Koren, A. Zaban "Fabrication of continuous conducting gold wires by electrospinning" *Chem. Mater.* 2008, 20, 3055.
69. **V. G. Pol**, A. Zaban "Application of microwave superheating for the synthesis of TiO_2 rods" *Langmuir*, 2007, 23, 11211.
68. **V. G. Pol**, P. Thiyagarajan, "Measurement of autogenous pressure and dissociated species during the thermolysis of mesitylene for the synthesis of monodispersed, pure, paramagnetic carbon particles" *Industrial & Engineering Chemistry Research*, 2009, 48, 1484.
67. **V. G. Pol**, S. V. Pol, A. Gedanken "Micro to nano conversion: A one-step, environmentally friendly, solid state, bulk fabrication of WS_2 and MoS_2 nanoplates" *Cryst. Growth & Design*, 2008, 8, 1126.
66. **V. G. Pol**, J. Calderon-Moreno, S. Acharya, K. Ariga, P. Thiyagarajan, M. Popa, Synthesis of new red emitting single-phase europium oxycarbonate, *Inorg . Chem.*, 2009, *in press*
65. **V. G. Pol**, J. Calderon-Moreno, M. Popa, S.Gohil, G.A.Seisenbaeva, V.G.Kessler "Methodical thermolysis of $Ba_2Ti_2(thd)_4(OnPr)_8(nPrOH)_2$ under autogenous pressure followed by combustion for the synthesis of dielectric tetragonal $BaTiO_3$ nanopowder" *Chem. An Asian J.*, 2009, *in press*
64. **V. G. Pol**, A. Zaban "Growing TiO_2 -based pillars by chemisorbed nanotitania followed by annealing" *J. Phys. Chem. C*, 2007, 111, 14574.
63. **V.G. Pol**, J.M. Calderon-Moreno, P. J. Chupas, R.E. Winans, P. Thiyagarajan, Synthesis of monodispersed prolate spheroid shaped paramagnetic carbon, *Carbon*, 2009, 47, 1050.
62. **V. G. Pol**, S. V. Pol, A. Gedanken, "One pot, environmentally benign, thermal reaction to fabricate WSe_2 and $MoSe_2$ nanoplates" *J. Nano Research*, 2008, 3, 15.
61. **V. G. Pol**, P. Thiyagarajan, S. Acharya, K.Ariga, I.Felner, Superconducting nanocrystalline tin protected by carbon, *Langmuir*, 2009, 25, 2582.
60. **V. G. Pol**, S. V. Pol, N. Perkas, A. Gedanken "WS₂ breeds with carbon to create worm-like nanostructure and assembly: Reaction of W(CO)₆ with S under autogenic pressure at elevated temperature in an inert atmosphere" *J. Phys. Chem. C*, 2007, 111, 134.
59. **V. G. Pol**, P. P. George, S.V. Pol, J. Chen and A. Gedanken "Combining MoS₂ or MoSe₂ nanoflakes with carbon by reacting Mo(CO)₆ with S or Se under their autogenic pressure at elevated temperature" *J. Mater. Sci.* 2008, 43, 1966.

58. **V. G. Pol**, S. V. Pol, I. Felner, A. Gedanken, "Critical current density in the MgB₂ nanoparticles prepared under autogenic pressure at elevated temperature" *Chem. Phys. Lett.* 2006, **433**, 115.
57. **V. G. Pol**, S. V. Pol, A. Gedanken "Core-shell nanorods of SnS-C and SnSe-C: Synthesis and Characterization" *Langmuir*, 2008, **24**, 5135.
56. **V. G. Pol**, S. V. Pol, B. Markovsky, J.M. Calderon-Moreno, A. Gedanken, "Implementation of an electric field (AC and DC) for the growth of carbon filaments via Reaction under Autogenic Pressure at Elevated Temperatures of mesitylene without catalyst or solvent" *Chem. Mater.* 2006, **18**, 1512.
55. **V.G. Pol**, S. V. Pol, A. Gedanken, S. H. Lim, Z. Zhong, J. Lin, "Thermal decomposition of commercial silicone oil to produce high yield high surface area SiC nanorods" *J. Phys. Chem. B*, 2006, **110**, 11237.
54. **V. G. Pol**, S. V. Pol, P. P. George, B. Markovsky, A. Gedanken "Synthesis of conducting SiO₂-carbon composite from commercial silicone grease and its conversion to paramagnetic SiO₂ particles," *J. Phys. Chem. B* 2006, **110**, 13420.
53. **V. G. Pol**, S. V. Pol, J. M. Calderon Moreno, A. Gedanken "High yield one-step synthesis of carbon spheres produced by dissociating individual hydrocarbons at their autogenic pressure at low temperatures" *Carbon*, 2006, **44**, 3285.
52. **V. G. Pol**, S.V. Pol, J. Calderon-Moreno, M.G. Sung, S. Asaia, A. Gedanken "The dependence of the oriented growth of carbon filaments on the intensity of a magnetic field" *Carbon*, 2006, **14**, 1913.
51. **V. G. Pol**, S. V. Pol, A. Gedanken, V. G. Kessler, G. A. Seisenbaeva, M. Sung, and S. Asai "Applied magnetic field rejects the coating of ferromagnetic carbon from the surface of ferromagnetic cobalt: RAPET of CoZr₂(acac)₂(O*i*Pr)₈" *J. Phys. Chem. B*, 2005, **109**, 6121.
50. **V. G. Pol**, S. V. Pol, A. Gedanken "Novel synthesis of high surface area silicon carbide by RAPET (Reactions under Autogenic Pressure at Elevated Temperature) of organosilanes" *Chem. Mater.* 2005, **17**, 1797.
49. **V. G. Pol**, H. Grisaru, A. Gedanken, "Coating noble metal nanocrystals (Ag, Au, Pd and Pt) on polystyrene spheres via ultrasound irradiation," *Langmuir*, 2005, **21**, 3635.
48. **V. G. Pol**, A. Gedanken, J. Calderon-Moreno "Sonochemical deposition of Au nanoparticles on titania and significant decrease in melting point of gold" *J. Nanosci. and Nanotech.* 2005, **5**, 975.
47. **V. G. Pol**, S. V. Pol, A. Gedanken, M-G Sung, A. Shigeo "Magnetic field guided formation of long carbon filaments (sausages)" *Carbon*, 2004, **42**, 2738.
46. **V. G. Pol**, M. Motiei, J. Calderon-Moreno, M. Yoshimura, A. Gedanken "Carbon spherules: Synthesis, properties and mechanistic elucidation" *Carbon*, 2004, **42**, 111.
45. **V. G. Pol**, S.V. Pol, A. Gedanken, Y. Goffer "Thermal decomposition of tetraethylorthosilicate produces Si coated carbon spheres" *J. Mater. Chem.*, 2004, **14**, 966.
44. **V. G. Pol**, A. Gedanken, J. Calderon-Moreno "Deposition of gold nanoparticles on silica spheres: A sonochemical approach" *Chem. Mater.* 2003, **15**, 1111.
43. **V. G. Pol**, M. Motiei, A. Gedanken, J. Calderon-Moreno, Y. Mastai "Sonochemical deposition of air-stable iron nanoparticles on monodispersed carbon spherules" *Chem. Mater.*, 2003, **15**, 1378.
42. **V. G. Pol**, O. Palchik, A. Gedanken, I. Felner "Synthesis of europium oxide nanorods by ultrasound irradiation" *J. Phys. Chem. B*, 2002, **106**, 9737.
41. **V. G. Pol**, R. Reisfeld, A. Gedanken "Sonochemical synthesis and optical properties of europium oxide nanolayer coated on titania" *Chem. Mater.* 2002, **14**, 3920.
40. **V. G. Pol**, D. N. Srivastava, O. Palchik, V. Palchik, M. A. Slifkin, A. M. Weiss, A. Gedanken "Sonochemical deposition of silver nanoparticles on silica spheres" *Langmuir*, 2002, **18**, 3352.

In collaboration

39. S. V. Pol, **V. G. Pol**, A. Gedanken, D.Sherman, "A solvent free process for the generation of strong, conducting carbon spheres by the thermal degradation of waste polyethylene terephthalate" *Green Chemistry*, 2009, **11**, 448.
38. C. T. Lo, B. Lee, **V. G. Pol**, N. L. Dietz Rago, S. Seifert, R.E. Winans, P. Thiagarajan "Effect of molecular properties of block copolymers and nanoparticles on the morphology of self-assembled bulk nanocomposites" *Macromolecules*, 2007, **40**, 8302.

37. S. V. Pol, **V. G. Pol**, J. Calderon-Moreno, C. Stephanie, A. Gedanken "Facile Synthesis of Photoluminescent ZnS and ZnSe Nanopowders" *Langmuir*, 2008, 24, 10462.
36. S. V. Pol, **V. G. Pol**, A. Gedanken, M-G Sung, and S. Asai, Effects of 10 tesla external magnetic field are different on the controlled thermolysis of acetyl acetonates of Co, Ni and Fe, *Langmuir* 2008, 24, 7532.
35. P. P. George, **V. G. Pol**, A. Gedanken, A. Gabashvili, M. Cai, A. M. Mance, L. Feng, M. S. Ruthkosky "Selective coating of anatase and rutile TiO₂ on carbon via ultrasound irradiation: mitigating fuel cell catalyst degradation" *J. Fuel Cell Sci. and Tech.*, 2008, 5, 41012.
34. S. V. Pol, **V. G. Pol**, A. Gedanken "Synthesis of ferromagnetic core-shell nanofibers" *J. Phys. Chem. C*, 2007, 111, 16781.
33. S. V. Pol, **V. G. Pol**, Jose M Calderon-Moreno, A. Gedanken "Facile synthesis of WSe₂ nanoparticles and carbon nanotubes" *J. Phys. Chem. C* 2008, 112, 5356.
32. S. Chakraverty, A. Frydman, **V. G. Pol**, S. V. Pol, A. Gedanken "The affect of a weak ferromagnetic matrix on a system of nanomagnetic particles" *Phys. Review B*. 2008, revised.
31. M. Koltypin, **V. G. Pol**, A. Gedanken, D. Aurbach "The study of carbon-coated V₂O₅ nanoparticles as a potential cathodic material for Li rechargeable batteries" *J. Electrochem. Soc.* 154, 2007, A605.
30. P. P. George, **V. G. Pol**, A. Gedanken "High-yield synthesis of Nb₂O₅@C core-shell nanobars and Nb₂O₅ nanobars obtained by reacting Nb(OEt)₅ under autogenic pressure at elevated temperatures and its optical properties" *Nanoscale Res. Lett.*, 2007, 2, 17.
29. S. V. Pol, **V. G. Pol**, A. Gedanken, I. Felner, M-G Sung, S. Asai "External magnetic field induced mesoscopic organizations of Fe₃O₄ pyramids and carbon sheets" *Inorg . Chem.* 2007, 12, 4951.
28. P. P. George, **V. G. Pol**, A. Gedanken, M. A. Slifkin, V. Palchik "Synthesis of carbon encapsulated nanocrystals of WP by reacting W(CO)₆ with triphenylphosphine at elevated temperature under autogenic pressure" *J. Nanoparticle Research*, 2007, 10, 1007.
27. S. V. Pol, **V. G. Pol**, I. Felner, A. Gedanken "The thermal decomposition of the three magnetic acetates at their autogenic pressure yields different products, Why?" *Eur. J. Inorg. Chem.* 2007, 2089–2096
26. C. R. Patra, A. Odani, **V. G. Pol**, D. Aurbach, A. Gedanken "Microwave-assisted synthesis of tin sulfide nanoflakes and their electrochemical performance as Li-inserting materials," *J. Solid State Electrochemistry*, 2007, 11, 186.
25. S. V. Pol, **V. G. Pol**, A. Gedanken "Encapsulating ZnS and ZnSe nanocrystals in the carbon shell: A RAPET approach" *J. Phys. Chem. C*, 2007, 111, 13309.
24. A. Odoni, **V. G. Pol**, S. V. Pol, D. Aurbach, A. Gedanken "Testing of carbon-coated VO_x prepared via RAPET as Li insertion materials" *Adv. Mater.* 2006, 18, 1431.
23. S. V. Pol, **V. G. Pol**, A. Gedanken "Synthesis of WC nanotubes" *Adv. Mater.* 2006, 18, 2023.
22. S. V. Pol, **V. G. Pol**, Y. Grinblat, R. K. Selvan, V. G. Kessler, G. A. Seisenbaeva, A. Gedanken "Synthesis of nanocrystalline zirconium titanate and its dielectric properties" *J. Phys. Chem. C*, 2007, 111, 2484.
21. N. Perkas, **V. G. Pol**, S. V. Pol, A. Gedanken "Gold induced crystallization of silica and titania particles" *J. Crystal Growth and Design*. 2006, 6, 293.
20. J. M. Calderon-Moreno, A. Labarta, X. Batlle, D. Crespo, **V. G. Pol**, S. V. Pol, A. Gedanken "Magnetic properties of dense nanographitic carbon filaments formed via thermal decomposition of mesitylene under strong electric current" *Carbon*, 2006, 44, 2849.
19. S. V. Pol, **V. G. Pol**, A. Gedanken "Growth of carbon sausages filled with *in situ* formed tungsten oxide: thermal dissociation of W[OCH(CH₃)₂]₆ in isopropanol" *New J. Chem.*, 2006, 30, 370.
18. R. K. Selvan, C. O. Augustin, C. Sanjeeviraja, **V. G. Pol**, A. Gedanken "Optimization of sintering on the structural, electrical and dielectric properties of SnO₂ coated CuFe₂O₄ nanoparticles" *Mater. Chem. Phys.* 2006, 99, 109.
17. S. V. Pol, **V. G. Pol**, A. Frydman, G. N. Churilov, A. Gedanken "Fabrication and magnetic properties of fullerene like Ni-C core-shell nanostructures" *J. Phys. Chem. B*, 2005, 109, 9495.
16. S. V. Pol, **V. G. Pol**, V. Kessler, G. A. Seisenbaeva, L. A. Solovyov and A. Gedanken "Synthesis of WO₃ nanorods by reacting WO(OMe)₄ under autogenic pressure at elevated temperature followed by annealing" *Inorg. Chem.*, 2005, 44, 9938.

15. R. Harpness, Z. Peng, L. Xiansong, **V. G. Pol**, Y. Koltypin, A. Gedanken “Preparation and controlling agglomeration for Ru nanoparticles by microwave-polyol process” *J. Coll. Inter. Sci.*, 2005, 287, 678.
14. D. N. Srivastava, **V. G. Pol**, O. Palchik, A. Gedanken “Preparation of stable porous nickel and cobalt oxides using inorganic ionic precursors” *Ultrasonics Sonochemistry*, 2005, 12, 205.
13. L. Qiu, **V. G. Pol**, W. Wing, A. Gedanken “The preparation of tin nano-rods by sonochemical method” *Ultrasonics Sonochemistry*, 2005, 12, 243.
12. R. K. Rana, **V. G. Pol**, I. Felner, E. Meridor, A. Frydman, A. Gedanken “Encapsulating a superconducting material, MgCNi₃, in a carbon nanoflask” *Adv. Mater.* 2004, 16, 12.
11. S. V. Pol, **V. G. Pol**, A. Gedanken “Reactions under autogenic pressure at elevated temperature produces core shell structures of metals/metal oxides with carbon from various alkoxides” *Chem. Eur. J.* 2004, 10, 4467.
10. L. Qiu, **V. G. Pol**, Y. Wei, A. Gedanken “Synthesis of alpha-MoTe₂ nanorods via annealing Te-seeded amorphous MoTe₂ particles” *Inorg. Chem.* 2004, 43, 6061.
9. S. V. Pol, **V. G. Pol**, V. G. Kessler, G. A. Seisenbaeva, M-G Sung, S. Asai, A. Gedanken “The effect of a magnetic field on a RAPET of MoO(OMe)₄; Fabrication of MoO₂ nanoparticles coated with carbon or separated MoO₂ and carbon particles” *J. Phys. Chem B*, 2004, 108, 6322.
8. S. V. Pol, **V. G. Pol**, G. Seisenbaeva, V. G. Kessler, A. Gedanken “Stabilization of metastable tetragonal phase of cobalt and zirconia in Co-ZrO₂ nanocomposite by *in situ* formed carbon via the Reaction under Autogenic Pressure at Elevated Temperature” *Chem. Mater.* 2004, 16, 1793.
7. H. Grisaru, **V. G. Pol**, A. Gedanken, I. Nowik “Preparation and characterization of Cu₂SnSe₄ nanoparticles using a microwave-assisted polyol method” *Eur. J. Inorg. Chem.* 2004, 9, 1859.
6. L. Qiu., **V. G. Pol**, Y. Wei, A. Gedanken “Sonochemical decoration of multi-walled carbon nanotubes with nanocrystalline tin” *New J. Chem.* 2004, 28, 1056.
5. G. T. Zhou, **V. G. Pol**, O. Palchik, R. Kerner, E. Sominski, Y. Koltypin, A. Gedanken “A fast synthesis for Zintl phase compounds of Na₃SbTe₃, NaSbTe₂ and K₃SbTe₃ by microwave irradiation” *J. Solid State Chem.*, 2004, 177, 361.
4. J.S. Gnanaraj, **V. G. Pol**, A. Gedanken, D. Aurbach “Improving the high-temperature performance of LiMn₂O₄ spinel electrodes by coating the active mass with MgO via a sonochemical method” *Electrochemistry Communications*, 2003, 5, 940.
3. G.T. Zhou, O. Palchik, V.G. Pol, E. Sominski, Y. Koltypin, A. Gedanken “Microwave-assisted solid-state synthesis and characterization of intermetallic compounds of Li₃Bi and Li₃Sb” *J. Mater. Chem.*, 2003, 13, 2607.
2. Q. Li, H. Li, **V.G. Pol**, I. Bruckental, Y. Koltypin, J. Calderon-M, I. Nowik, A. Gedanken, “Sonochemical synthesis, structural and magnetic properties of air-stable Fe/Co alloy nanoparticles” *New J. Chem.*, 2003, 27, 1194.
1. L. Qiu, **V.G. Pol**, Y. Wei, A. Gedanken “A two-step process for the formation of MoTe₂ nanotubes: Combining sonochemical process with heat treatment” *J. Mater. Chem.*, 2003, 13, 2985.

SUMMARY OF SELECTED PUBLICATIONS

Journals	Impact factors (ISI 2007)	Number of articles published
Advanced Materials	8.1	3
Chem. Eur. J.	5.33	1
Chem. Mater.	4.88	7
Green chemistry	4.84	1
J. Mater. Chem.	4.34	3
Carbon	4.26	6
Electrochemistry Comm.	4.20	1
Inorg. chemistry	4.12	4
J. Phys. Chem.B/C	4.08	13
Crystal Growth and Design	4.05	2
Langmuir	4.01	8
Eur. J. Inorganic Chem.	2.7	3
New Journal of Chemistry	2.67	3

J. Electrochem. Soc.	2.48	1
Ultrasonic Sonochem.	2.43	2
J. Nanoparticles Research	2.34	1
J. Colloid and Interface Sci	2.31	1
Chem Phys. Lett.	2.21	1

RECOMMENDATIONS

1. Dr. M.M. Thackeray, Argonne Distinguished Fellow, Argonne National lab., IL, 60439, USA Ph. 630-252-9184 Email: thackeray@anl.gov	2. Dr. P. Thiyagarajan (<i>Postdoc supervisor</i>) Program Manager, Office of Basic Energy Sciences U.S. Department of Energy, Washington, DC 20585 Ph: 301-903-9706, Fax: 301-903-9513 Email : P.Thiyagarajan@Science.doe.gov
3. Prof. Arie Zaban (<i>Postdoc advisor</i>) Department of Chemistry, Bar-Ilan University, Ramat-Gan, 52900, Israel Phone: +972-3-5317876, Fax: 972-3-5351250 Email : zabana@mail.biu.ac.il	4. Prof. Calderon-Moreno JM (<i>Collaborator</i>) Univ Politech Catalunya, Dept Appl Phys, Barcelona 08860, Spain Tel : +34-935332280/665135525 Email : jose.calderon@upc.edu
5. Dr. Myron, Harold W. Director, Division of Educational Programs, Tel : (630) 252-3380 Argonne National lab., IL, 60439, USA Email : hmyron@dep.anl.gov	6. Prof. Aharon Gedanken (<i>Ph.D. supervisor</i>) Center for Adv. Mater. & Nanotech., Bar-Ilan University, 52900, Israel Phone:+972-3-5318315,Fax : 972-3-5351250 Email : gedanken@mail.biu.ac.il