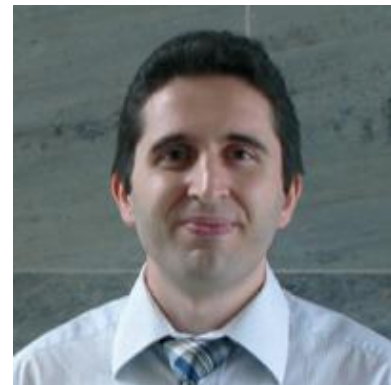




## Assoc. Prof. Muhammet S. Toprak

### Position

- **Lecturer (on Nanomaterials and Nanotechnology)**
  - Associate Professor of Materials Chemistry, KTH-Royal Institute of Technology
  - Team Leader – Nanoengineered Thermoelectric Materials
  - Team Leader – Nanofluids for enhanced heat transfer
- 
- **Principal Researcher- Nanocatalyst Group- Biofuel Research Team (BRT), ABRII, Karaj, Iran**



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### Date of Birth

16.11.1973, Silvan (Diyarbakir), Turkey

### Academic Career

**2010 - present:** Lecturer (Docent/Assoc. Prof.) in Materials Chemistry, Functional Materials Division, School of Information and Communication Technology, KTH, Stockholm, Sweden.

**2007 – 2010:** Forskare – Senior Lecturer, Functional Materials Division  
Dept. of Microelectronics and Applied Physics, KTH, Stockholm, Sweden.

**2005 – 2007:** Research Associate, Dept. of Chemistry & Biochemistry, Stucky group  
University of California at Santa Barbara, CA 93106, USA.

**2003 – 2005:** Senior Researcher, Forskare. Materials Chemistry Division  
Dept. of Materials Science and Engineering, KTH, Stockholm, Sweden.

**2001-2003:** Teknologie Doktorsexamen (Ph. D.), Dept of Materials Science and Engineering, KTH, Stockholm, Sweden

**1999-2001:** Technical Licentiate in Materials Chemistry, Dept of Materials Science and Engineering, KTH, Stockholm, Sweden

**1995-1997:** M. Sc. in Inorganic Chemistry, Dept of Chemistry, Middle East Technical University, METU, Ankara, Turkey

**1990-1995:** B. Sc. in Chemical Education, Dept. of Chemistry, Middle East Technical University, METU, Ankara, Turkey. (incl. 1 year English prep school)



## Post Doctoral Work

**2010 - present:** Lecturer (Docent/Assoc. Prof.) in Materials Chemistry, Functional Materials Division, School of Information and Communication Technology, KTH, Stockholm, Sweden.

**2007 – 2010:** Forskare – Senior Lecturer, Functional Materials Division  
Dept. of Microelectronics and Applied Physics, KTH, Stockholm, Sweden.

**2005 – 2007:** Research Associate, Dept. of Chemistry & Biochemistry, Stucky group  
University of California at Santa Barbara, CA 93106, USA.

**2003 – 2005:** Senior Researcher, Forskare. Materials Chemistry Division  
Dept. of Materials Science and Engineering, KTH, Stockholm, Sweden.

## Research Areas

- Nanomaterials for energy applications
- Nanomaterials for biomedical applications
- Nanomaterials for environment applications
- Self-assembly routes for fabrication of nanomaterials
- Inorganic-organic hybrid/composite nanomaterials
- Combinatorial synthesis
- Magnetic nanostructures

## Language

Turkish, English Swedish

## Honors and Awards

- Marquis Who's Who in the World (2009).
- Grant, Post Doctoral Studies at KTH, MAP, FNM  
Knut och Alice Wallenberg Stiftelsen, Sweden. Aug 2007 - Aug 2010
- Dow Materials Use award in New Venture Competition at UCSB, as a part of Technology Management Program (TMP).  
[http://www.tmp.ucsb.edu/extracurricular/nvc\\_photos\\_07/052.html](http://www.tmp.ucsb.edu/extracurricular/nvc_photos_07/052.html)
- Scholarship, Post Doctoral Studies at UC Santa Barbara, UCSB, USA  
Knut och Alice Wallenberg Stiftelsen, Sweden. June 2005 – July 2007
- Scholarship for Post graduate studies in Sweden.  
CAMLICA Foundation, Turkey. Feb 1999 – June 1999
- Munir-Birsel Scholarship for Ph.D. studies  
The Scientific and Technological Research Council of Turkey. 1998 – 1999



- Scholarship for Master Studies (High Honour student)  
The Scientific and Technological Research Council of Turkey. 1996 – 1997

## Grants and Funding

- **Next Generation Nano-engineered Thermoelectric Converters - from concept to industrial validation. 2011-2014: European Commission: 3 900 000 Euro** (coordinator of the project with 11 European partners)
- **Nanoengineered Thermoelectric Materials: 2010-2012: Swedish Research Council – VR: 1 800 000 SEK**
- **Novel Generation of PMMA-Zinc Oxide Nanocomposites for Advanced Applications (NOVAPOL): 2010-2012: Vinnova – Research and Innovation for Sustainable Growth: 2 200 000 SEK**

## Publications

### Book Chapter

**M. S. Toprak**, S. Li, M. Muhammed. 2011  
Chapter 2.2 on **Fabrication routes for nanostructured TE material architectures**. In **CRC Handbook Thermoelectrics and its Energy Harvesting**. Book edited by **D.M. Rowe**, ISBN 9781439840412 (Bosa Roca).

Vadim Kessler, **Muhammet S. Toprak**. 2012  
Annex 1 on “Technical note method of synthesis of engineered nanomaterials and their implications for nanotoxicology and nanomedicine”. in **Adverse Effects of Engineered Nanoparticles**. Book edited by **B. Fadeel, Antonio Pietroiusti & Anna A. Shvedova**

Muhammed, M. and **Toprak, M.** 2006.  
Chapter 41 Nanostructured Skutterudites. In **Thermoelectrics Handbook: Macro to Nano Structured Materials**. Edited by **D. M. Rowe**, ISBN 978-0849322648 (CRC Press, New York)

## Patents

1. Enhancement of boiling heat transfer by Nanofluid.  
Mohammad, Zhang, **Toprak**, Witharana, Palm. Swedish Patent Application 0301262-2 (2003).
2. Porous Layer on heat exchanger to increase surface area and heat transfer  
R. Furberg, B. Palm, S. Li, M. Muhammed, **M. Toprak**  
PCT Int. Appl. (2007), 56, CODEN: PIXXD2, WO 2007100297, A1 20070907, CAN 147:346365, AN 2007:998660.
3. Oxidation protective coating of magnetic nanoparticles and methods of preparation.  
D. K. Kim, M. Muhammed, Y. Zhang, **M. Toprak** (Swedish Patent Application No: 0200972-8)
4. Suspensions of mesoporous silica as heat exchange fluids and method of preparation thereof  
M. Muhammed, N. Nikkam, **M. S. Toprak**, S. Li, M. Saleemi (Swedish patent application No: 10009249)

**Full papers in peer reviewed journals**

1. R. Shahid, **M.S. Toprak**, H. Soliman, M. Muhammed  
Low temperature synthesis of cubic phase zinc sulfide quantum dots  
Central European Journal of Chemistry, in press, 2011.
2. Sugunan, Y. Zhao, S. Mitra, L. Dong, S. Li, S. Popov, S. Marcinkevicius, **M. S. Toprak**, and M. Muhammed,  
'Synthesis of tetrahedral quasi type-II CdSe-CdS core-shell quantum dots',  
Nanotechnology, In Press, 2011.
3. Y. Zhao, A. Sugunan, D. B. Rihtnesberg, Q. Wang, **M. S. Toprak**, and M. Muhammed,  
'Size-tuneable synthesis of photoconducting poly-(3-hexylthiophene) nanofibres and nanocomposites',  
Physica Status Solidi, In Press, 2011.
4. R. Afrasiabi, A. Sugunan, R. Khan, **M. S. Toprak**, and M. Muhammed,  
'Microwave mediated synthesis of semiconductor quantum dots',  
Physica Status Solidi, In Press, 2011.
5. D. B. Rihtnesberg, Q. Wang, S. Almqvist, A. Sugunan, X. Yang, **M. S. Toprak**, M. Göthelid,  
'Ultraviolet photodetectors based on ZnO nanorods and nanoflowers',  
Nanoscale Research Letters, In Press, 2011.
6. E. Karaoglu, H. Deligoz, H. Sozeri, A. Baykal, **M. S. Toprak**  
Hydrothermal Synthesis and Characterization of PEG-Mn<sub>3</sub>O<sub>4</sub> Nanocomposite  
(2011) Nano-Micro Lett. 3 (1), 25-33.
7. A. Kunzmann, B. Andersson, C. Vogt, N. Feliu, F. Ye, S. Gabrielsson, **M. S. Toprak**, T. Thurnherr, S. Laurent, M. Vahter, H. Krug, M. Muhammed, A. Scheynius, B. Fadeel  
Efficient internalization of silica-coated iron oxide nanoparticles of different sizes by primary human macrophages and dendritic cells  
(2011) Toxicology and Applied Pharmacology, Article in Press, Manuscript no: TAAP-D-10-00791R1.
8. Fei Ye, Jian Qin, **Muhammet S. Toprak** and Mamoun Muhammed,  
Multifunctional core-shell nanoparticles: superparamagnetic, mesoporous, and thermosensitive  
(2011) Journal of Nanoparticle Research, SPECIAL ISSUE: NANOSTRUCTURED MATERIALS 2010  
Article in Press, DOI 10.1007/s11051-011-0272-8.
9. Z. Durmus, B. Unal, **M.S. Toprak**, H. Sozeri and A. Baykal  
Synthesis and Characterization of Poly(3-thiophenyl Acetic Acid) (P3TAA)-BaFe<sub>2</sub>O<sub>9</sub> Nanocomposite  
(2011) Polyhedron, 30, pp. 1120-1126.
10. Durmus, Z., Kavas, H., Baykal, A., Sozeri, H., Alpsoy, L., Elik, S.Ü., **Toprak, M.S.**  
Synthesis and characterization of l-carnosine coated iron oxide nanoparticles  
(2011) Journal of Alloys and Compounds, 509 (5), pp. 2555-2561.
11. Durmus, Z., Sözeri, H., Unal, B., Baykal, A., Topkaya, R., Kazan, S., **Toprak, M.S.**  
Magnetic and dielectric characterization of alginate-chitosan-Fe<sub>3</sub>O<sub>4</sub> nanocomposite  
(2011) Polyhedron, 30 (2), pp. 322-328.
12. Durmus, Z., Erdemi, H., Aslan, A., **Toprak, M.S.**, Sozeri, H., Baykal, A.



- Synthesis and characterization of poly(vinyl phosphonic acid) (PVPA)-Fe<sub>3</sub>O<sub>4</sub> nanocomposite (2011) *Polyhedron*, 30 (2), pp. 419-426.
13. M. Aydın, Z. Durmus, H. Kavas, B. Esat, H. Sözeri, A. Baykal, F. Yılmaz and **M.S. Toprak**  
Synthesis and characterization of poly(3-thiophene acetic acid)/Fe<sub>3</sub>O<sub>4</sub> nanocomposite (2011) *Polyhedron*, Article in Press, doi:10.1016/j.poly.2011.01.009
  14. S. Li, M. M. Lin, **M. S. Toprak**, D. K. Kim, M. Muhammed  
Nanocomposites of Polymer and Inorganic Nanoparticles for Optical and Magnetic Applications (2010) *Nano Reviews* [Online], MS ID:5214.
  15. Sugunan A., Guduru V. K., Uheida A., **Toprak M. S.**, and Muhammed M.  
Radially Oriented ZnO nanowires on Flexible Poly-L-Lactide Nanofibers for 'Continuous-Flow' Photocatalytic Water Purification (2010) *Journal of American Ceramic Society* 93 (11), pp 3740-3744.
  16. A. Baykal, N. Bitrak, B. Ünal, H. Kavas, Z. Durmus, S. Özden, **M.S. Toprak**  
Polyol synthesis of (polyvinylpyrrolidone) PVP-Mn<sub>3</sub>O<sub>4</sub> nanocomposite (2010) *Journal of Alloys and Compounds* 502, pp 199-205.
  17. Z. Durmus, M. Tomas, A. Baykal, H.Kavas, T. Gürkaynak Altınçekiç, **M. S. Toprak**,  
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Magnetic and dielectric characterization of alginic acid-Fe<sub>3</sub>O<sub>4</sub> nanocomposite (2010) *Polyhedron*, 12(8), pp. 3039-3048.
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CTAB-Mn<sub>3</sub>O<sub>4</sub> nanocomposites: Synthesis, NMR and low temperature EPR studies (2010) *Polyhedron*, 29 (5), pp. 1375-1380.
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- (2010) *J. Mater. Chem.*, 20, pp. 1208–1214, DOI: 10.1039/b916208a.
27. Altincekic, T.G., Boz, I., Baykal, A., Kazan, S., Topkaya, R., **Toprak, M.S.**  
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  28. Birsöz, B., Baykal, A., Sözeri, H., **Toprak, M.S.**  
Synthesis and characterization of polypyrrole-BaFe<sub>12</sub>O<sub>19</sub> nanocomposite  
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(2010) *Journal of Non-Crystalline Solids* 356 (9-10), pp. 484-489,  
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  30. R Furberg, B Palm, S Li, **M Toprak**, M Muhammed  
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(2009) *J. Heat Transfer* 131 (10), pp. 101010, doi:10.1115/1.3180702.
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Microwave synthesis and characterization of Zn-doped nickel ferrite nanoparticles  
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  32. Dong, L; Pinos, A; Sugunan, A; Li, S; Popov, S; **Toprak, M**; Friberg, A T.; Muhammed, M  
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L-lysine coated iron oxide nanoparticles: Synthesis, structural and conductivity characterization  
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Nanoengineered BSCF cathode materials for intermediate-temperature solid-oxide fuel cells  
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A green chemical route for the synthesis of Mn<sub>3</sub>O<sub>4</sub> nanoparticles  
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(2009) *Journal of Magnetism and Magnetic Materials*, 321 (14), pp. 2145-2149.
  38. Kavas, H., Baykal, A., **Toprak, M.S.**, Köseoglu, Y., Sertkol, M., Aktaş, B.  
Cation distribution and magnetic properties of Zn doped NiFe<sub>2</sub>O<sub>4</sub> nanoparticles synthesized by PEG-assisted hydrothermal route  
(2009) *Journal of Alloys and Compounds*, 479 (1-2), pp. 49-55.
  39. Vogt, C., **Toprak, M.S.**, Muhammed, M., Laurent, S., Bridot, J.-L., Müller, R.N.  
High quality and tuneable silica shell-magnetic core nanoparticles  
(2009) *Journal of Nanoparticle Research*, 12(4), pp. 1-11. Doi: 10.1007/s11051-009-9661-7.
  40. Li, S., Qin, J., Fornara, A., **Toprak, M.**, Muhammed, M., Kim, D.K.  
Synthesis and magnetic properties of bulk transparent PMMA/Fe-oxide nanocomposites



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41. Ozkaya, T., **Toprak, M.S.**, Baykal, A., Kavas, H., Köseoglu, Y., Aktaş, B.  
Synthesis of Fe<sub>3</sub>O<sub>4</sub> nanoparticles at 100 °C and its magnetic characterization  
(2009) *Journal of Alloys and Compounds*, 472 (1-2), pp. 18-23.
  42. Holten-Andersen, N., Mates, T.E., **Toprak, M.S.**, Stucky, G.D., Zok, F.W., Waite, J.H.  
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  43. Baykal, A., Kasapoglu, N., Durmuş, Z., Kavas, H., **Toprak, M.S.**, Köseoglu, Y.  
CTAB-assisted hydrothermal synthesis and magnetic characterization of NixCo<sub>1-x</sub>Fe<sub>2</sub>O<sub>4</sub>  
nanoparticles (x = 0.0, 0.6, 1.0)  
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A novel synthetic route to Mn<sub>3</sub>O<sub>4</sub> nanoparticles and their magnetic evaluation  
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  51. Li, S., Soliman, H.M.A., Zhou, J., **Toprak, M.S.**, Muhammed, M., Platzek, D., Ziolkowski, P.,  
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  53. Baykal, A., Kasapoglu, N., Köseoglu, Y., Başaran, A.C., Kavas, H., **Toprak, M.S.**  
Microwave-induced combustion synthesis and characterization of NixCo<sub>1-x</sub>Fe<sub>2</sub>O<sub>4</sub> nanocrystals  
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dots and PMMA  
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Field-activated sintering of skutterudites  
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Number of citations: 3.





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74. Christensen, M., Iversen, B.B., Bertini, L., Gatti, C., **Toprak, M.**, Muhammed, M., Nishibori, E. Structural study of Fe doped and Ni substituted thermoelectric skutterudites by combined synchrotron and neutron powder diffraction and ab Initio theory (2004) *Journal of Applied Physics*, 96 (6), pp. 3148-3157.
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76. **Toprak, M.**, Zhang, Y., Muhammed, M. Chemical alloying and characterization of nanocrystalline bismuth telluride (2003) *Materials Letters*, 57 (24-25), pp. 3976-3982.
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79. Baykal, **M. Toprak**, M.Kizilyalli, and R.Kniep, Hydrothermal and Microwave Synthesis of Boronphosphate  $\text{BPO}_4$  (2001) *Turk. J. Chem.* 25(4), 425-432.
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**International Conference Proceedings and Oral Presentations:**

1. One Step Synthesis of Ceria (CeO<sub>2</sub>) Nanofluids with enhanced thermal conductivity  
M. Saleemi, N. Nikkam, **M. S. Toprak**, E. B. Haghghi, M. Muhammed, R. Khodabandeh, B. Palm  
7th Nanoscience and Nanotechnology Conference – 2011 (NANO TR7), July 27-Aug 1, Istanbul, Turkey.
2. Microwave-assisted Synthesis of Copper Nanofluids for Heat Transfer Applications  
N. Nikkam, M. Saleemi, **M. S. Toprak**, M. Muhammed, E.B.Haghghi,R.Khodabandeh and B.Palm  
7th Nanoscience and Nanotechnology Conference – 2011 (NANO TR7), July 27-Aug 1, Istanbul, Turkey.
3. Bulk Nanostructured Thermoelectric Bismuth Telluride  
**M. S. Toprak**, M. Saleemi  
7th Nanoscience and Nanotechnology Conference – 2011 (NANO TR7), July 27-Aug 1, Istanbul, Turkey.
4. Next Generation Nano-engineered Thermoelectric Converters - from concept to industrial validation – NEXTEC  
**M. S. Toprak**  
7th Nanoscience and Nanotechnology Conference – 2011 (NANO TR7), July 27-Aug 1, Istanbul, Turkey.
5. Bulk nanostructured thermoelectric materials.  
**M. S. Toprak**, S. Li, M. Saleemi, A. Khan, and M. Muhammed  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
6. A surfactant-free Route to Quasi-octahedral CeO<sub>2</sub> Mesocrystals for SOFCs Application  
X. Wang, Y. Ma, J. Qin, **M. S. Toprak**, B. Zhu, and M. Muhammed  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
7. Low temperature synthesis and formation mechanism of CdTe nanotetrapods.  
A. Sugunan, J. Qin, **M. S. Toprak**, and M. Muhammed  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
8. Ceria Nanofluids for Efficient Heat Management.  
M. Saleemi, **M. S. Toprak**, S. Li, Y. Ma, X. Wang, N. Nikkam, M. Muhammed, E. B. Haghghi, R. Khodabandeh, B. Palm  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
9. Grafting Thermosensitive Polymer onto Nanocrystals  
F. Ye, J. Qin, S. Laurent, **M. S. Toprak**, R. Muller and M. Muhammed  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
10. Laser triggered drug release from smart polymeric nanospheres containing gold nanorods.  
D. Bacinello, A. Fornara, J. Qin, F. Ye, **M. S. Toprak** and M. Muhammed  
X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
11. Low-dimensional thermoelectric bismuth telluride.



- S. Li, **M. S. Toprak**, A. Sugunan, and M. Muhammed. X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
12. Microwave synthesis of nanostructured semiconductor materials.  
R. Khan, **M. Toprak** and M. Muhammed. X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
  13. Novel Nanofluids Based on Mesoporous Silica for Enhanced Heat Transfer.  
N.Nikkam, M. Saleemi, S. Li, **M. S. Toprak**, M. Muhammed, E. B. Haghighi, R. Khodabandeh, and B. Palm. X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
  14. Novel SDC nanowires/Na<sub>2</sub>CO<sub>3</sub> nanocomposite electrolyte for low-temperature SOFCs.  
Y. Ma, X. Wang, S. Li, **M. S. Toprak**, B. Zhu, and M. Muhammed. X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
  15. PLGA based multifunctional nanoparticles for drug delivery applications.  
A. Fornara, A. Chiavarino, J. Qin, **M. S. Toprak** and M. Muhammed. X International Conference on "Nanostructured Materials" (NANO 2010), September 13-17, Rome, Italy.
  16. Synthesis, Conductivity and Dielectric Characterization of Salicylic Acid-Fe<sub>3</sub>O<sub>4</sub> Nanocomposite  
A. Baykal, B. Unal, Z. Durmus, H. Kavas, **M. S. Toprak**,  
NanoTR-VI'6 Conference 15-18 June 2010, Çeşme-İzmir/Turkey, Jun. 2010.
  17. Covalent Immobilization of Invertase on PAMAM-Dendrimer Modified Superparamagnetic Iron Oxide Nanoparticles  
K. Uzun, E Çevik, M. Şenel, H. Sözeri, A. Baykal, M. F. Abasıyanık, **M.S. Toprak**,  
NanoTR-VI'6 Conference 15-18 June 2010, Çeşme-İzmir/Turkey.
  18. PEG assisted synthesis of Mn<sub>3</sub>O<sub>4</sub> Nanoparticles: Structural and Magnetic Study.  
A.Baykal, M.Tomaş, Z.Durmus, H.Kavas, **M.S.Toprak**,  
NanoTR-VI'6 Conference 15-18 June 2010, Çeşme-İzmir/Turkey.
  19. Polyol Synthesis of PVP- Mn<sub>3</sub>O<sub>4</sub> Nanocomposite  
Z. Durmus, A. Baykal, H. Kavas, **M.S. Toprak**  
NanoTR-VI'6 Conference 15-18 June 2010, Çeşme-İzmir/Turkey.
  20. Magnetic and dielectric characterization of alginic acid-Fe<sub>3</sub>O<sub>4</sub> nanocomposite.  
H. Sözeri, Z. Durmuş, B. Unal, A. Baykal, **M.S. Toprak**,  
International Conference on Superconductivity and Magnetism, 25-30 April 2010,  
Antalya/TURKEY.
  21. Synthesis and magnetic characterization of CuFe<sub>2</sub>O<sub>4</sub> nanorods by Polyol Method  
T.G. Altınçekic, Z.Durmuş, I. Boz, A. Baykal, B.Aktaş, **M.S. Toprak**,  
International Conference on Superconductivity and Magnetism, 25-30 April 2010,  
Antalya/TURKEY.
  22. Polyol Synthesis of PVP - Mn<sub>3</sub>O<sub>4</sub> Nanocomposite.  
T.G.Altınçekic, A. Baykal, N.Bitrak, H. Kavas, Z. Durmus, **M.S. Toprak**,  
International Conference on Superconductivity and Magnetism, 25-30 April 2010,  
Antalya/TURKEY.
  23. Synthesis, structural and conductivity characterization of alginic acid-Fe<sub>3</sub>O<sub>4</sub> nanocomposite  
H. Sözeri , B. Unal , **M.S. Toprak** , Z. Durmus, A. Baykal,  
International Conference on Superconductivity and Magnetism, 25-30 April 2010,  
Antalya/TURKEY.
  24. Sonochemical Synthesis and Characterization of Mn<sub>3</sub>O<sub>4</sub> Nanoparticles



- H. Sözeri, A. Baykal, H. Kavas, Z. Durmus, **M.S. Toprak**,  
International Conference on Superconductivity and Magnetism, 25-30 April 2010,  
Antalya/TURKEY.
25. PLLA-ZnO Hierarchical Nanostructure as Multifunctional Active Material for Photocatalytic Cleansing of Water (ORAL)  
Abhilash Sugunan, Veerendra K Guduru, Abdusalam Uheida, Gunaratna K Rajarao,  
**Muhammet S Toprak**, Mamoun Muhammed,  
34<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites, January  
24-29, 2010, Daytona Beach FL USA.
  26. Crosslinked Pluronic F127 Ferrogels for Magnetically Controlled Drug Release (ORAL)  
Jian Qin, Andrea Fornara, **Muhammet S Toprak**, Mamoun Muhammed,  
34<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites, January  
24-29, 2010, Daytona Beach FL USA.
  27. Tunable superparamagnetic Fe<sub>3</sub>O<sub>4</sub>-SiO<sub>2</sub> core-shell nanoparticles: synthesis, characterization, and in vitro compatibility with immune-competent cells (ORAL)  
C. Vogt, A. Kunzmann, N. Feliu Torres, J. Shi, B. Andersson, S. Gabrielsson, T. Thurnherr, P.  
Wick, S. Laurent, J.-L. Bridot, R. Mueller,  
**M. S Toprak**, H. F. Krug, A. Scheynius, B. Fadeel, M. Muhammed,  
34<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites, June 24-  
29, 2010, Daytona Beach FL USA.
  28. Conducting and Magnetic PVTri-Fe<sub>3</sub>O<sub>4</sub> Nanocomposites (ORAL)  
A. Baykal, H. Kavas, Z. Durmus, A. Bozkurt, **M. S. Toprak**,  
APA-2009 Polymer Science and Technology: Vision and Scenario, December 17-19, New Delhi,  
India.
  29. Synthesis, characterization and biocompatibility of tuneable superparamagnetic Fe<sub>3</sub>O<sub>4</sub>-SiO<sub>2</sub> core - shell nanoparticles (POSTER)  
C. Vogt, A. Kunzmann, N. F. Torres, J. Shi, T. Thurnherr, P. Wick, S. Laurent, Jean-Luc Bridot,  
R. Muller, **M. Toprak**, H. F. Krug, B. Fadeel, M. Muhammed,  
6th Key Symposium Nanomedicine, 9-11 September 2009, Stockholm, Sweden
  30. Preparation and Characterization Polyaniline/Mn<sub>3</sub>O<sub>4</sub> nanocomposite (POSTER)  
A. Baykal, Z. Durmus, H. Kavas, **M. S. Toprak**, APA-2009  
Polymer Science and Technology: Vision and Scenario, December 17-19, New Delhi, India.
  31. Multifunctional Nanoparticles for Simultaneous Targeted Drug Delivery and Visualization (POSTER)  
Andrea Fornara, Alberto Recalenda, Jian Qin, Jing Zou, Abhilash Sugunan, **Muhammet  
Toprak**, Ilmari Pyykkö, Mamoun Muhammed,  
EuroNanoMed, Sept. 28-30, 2009, Bled, SLOVENIA.
  32. L-lysine coated magnetite nanoparticles: Synthesis, Structural and Conductivity Characterization (POSTER)  
T.G.Altınçekiç, Z.Durmuş, H.Kavas, **M. S.Toprak**, A.Baykal, A.Aslan, A.Bozkurt,  
5<sup>th</sup> International Nanoscience and Nanotechnology Conference, 08-12 June, 2009, Anadolu  
Univ., Eskişehir, Turkey.
  33. Ovalbumin mediated synthesis of Mn<sub>3</sub>O<sub>4</sub> (POSTER)  
M. Direkçi, Z. Durmus, A. Baykal, H. Kavas, **M. S. Toprak**  
5<sup>th</sup> International Nanoscience and Nanotechnology Conference, 08-12 June, 2009, Anadolu  
Univ., Eskişehir, Turkey.
  34. Optimised Synthetic Route for Tuneable Shell SiO<sub>2</sub>@Fe<sub>3</sub>O<sub>4</sub> Core-Shell Nanoparticles (ORAL)  
C. M Vogt, **M. Toprak**, J. Shi, B. Fadeel, S. Brene, R. Sitnikov and M. Muhammed  
2008 MRS Fall Meeting, Advances in Material Design for Regenerative Medicine, Drug Delivery,  
and Targeting/Imaging, December 1 - 5, Boston, MA, USA



35. Active Cooperative Assemblies Towards Nanocomposites (Poster)  
**M. S Toprak**, C. Vogt and A. Sugunan  
2008 MRS Fall Meeting, Advances in Material Design for Regenerative Medicine, Drug Delivery, and Targeting/Imaging, December 1 - 5, Boston, MA, USA
36. Synthesis of Fe<sub>3</sub>O<sub>4</sub> nanoparticles at 100 oC and its magnetic characterization  
H. Kavas, T. Ozkaya, **M.S. Toprak**, A. Baykal, Y. Köseoğlu, A.C. Başaran, B. Aktaş,  
2nd ISS-Physics of Functional Micro- and Nanostructures, Sep. 2008, Hamburg/Germany.
37. Experimental investigation of an evaporator enhanced with a micro-porous structure in a two-phase thermosyphon loop (ORAL)  
R. Furberg, R. Khodabandeh, B. Palm, S. Li, **M. Toprak**, M. Muhammed  
ASME Summer Heat Transfer Conference, Aug 10-14, Jacksonville, Florida, USA, (2008)
38. Novel nanostructured macro-porous surfaces for enhanced boiling (Oral)  
S. Li, R. Furberg, **M. Toprak**, B. Palm, M. Muhammed  
9th International Conference on Nanostructured Materials, June 2-6, 2008, Rio de Janeiro/Brazil
39. Semiconductor Quantum Structures for In-vivo and In-vitro Visualization (Poster)  
A. Sugunan, R. S. Khan, **M. S. Toprak**, and M. Muhammed  
Knowledge Based Industries & Nanotechnology Conference, February 11-12, 2008, Doha/Qatar
40. Cooperative assembly routes for nanocomposites (Invited Talk)  
**M. S. Toprak**  
Particles 2008, Particle Synthesis, Characterization, and Particle-Based Advanced Materials, 10-13 May 2008, Wyndham Orlando Resort Hotel, Orlando, Florida/USA.
41. Synthesis and Characterization of Thermoelectric Bismuth Telluride Nanostructures (ORAL)  
S. Li, S. Zhang, Y. Liang, **M. S. Toprak**, M. Muhammed, Z. He, E. Mueller  
International Conference on Nanoscience and Technology, China 2007, June 4-6, 2007, Beijing/China
42. Tailoring magnetic microspheres with controlled porosity. (POSTER)  
**M. S. Toprak**, B. J. McKenna, H. J. Waite, G. D. Stucky,  
*Materials Research Society Fall Meeting 2006, Nov 27-Dec 1, Boston, MA, USA.*
43. Processing and characterization of nano-structured ZrO<sub>2</sub>/CoSb<sub>3</sub>. (ORAL)  
Z. He, C. Stiewe, S. Li, D. Platzek, G. Karpinski, E. Mueller, **M. Toprak**, M. Muhammed,  
25th International Conference on Thermoelectrics, Aug 6-10, Vienna/Austria, 2006.
44. Influence of phase composition on the thermoelectric properties of nanostructured skutterudite-ceramic composites. (ORAL)  
C. Stiewe, Z. He, S. Li, D. Platzek, **M. Toprak**, E. Mueller, M. Muhammed  
25th International Conference on Thermoelectric, Aug 6-10, Vienna/Austria, 2006.
45. Dendritically ordered nano-particles in a micro-porous structure for enhanced boiling. (ORAL)  
Richard Furberg, Shanghua Li, Björn Palm, **Muhammet Toprak**, Mamoun Muhammed,  
13th International Heat Transfer Conference, Aug 13-18, Sydney/Australia, 2006.
46. Promising bulk nanostructured thermoelectrics. (Invited Talk)  
M. Muhammed, **M. S. Toprak**, S. Li, C. Stiewe, D. Platzek, E. Mueller  
*ECT2006, 4th European Thermoelectric Conference, April 10-11, 2006, Cardiff, Wales UK*
47. Thermoelectric properties of nanostructured CoSb<sub>3</sub>-Ceramic Composites (ORAL)  
C. Stiewe, Z. He, D. Platzek, E. Mueller, S. Li, **M. Toprak**, M. Muhammed  
*ECT2006, 4th European Thermoelectric Conference, April 10-11, 2006, Cardiff, Wales UK*
48. Annealing and Doping Effects on Thermopower of Nanostructured Bismuth Telluride Thick Films. (ORAL)  
S. Li, J. Zhou, **M. S. Toprak**, M. Muhammed, D. Platzek, and E. Müller  
*ECT2006, 4th European Thermoelectric Conference, April 10-11, 2006, Cardiff, Wales UK*



49. Fabrication of transparent polymer-inorganic hybrid material (ORAL)  
S. Li, **M. Toprak**, Y. S. Jo, D. K. Kim, M. Muhammed,  
Materials Research Society spring meeting 2005, Mar 28-Apr 1, San-Francisco, USA.
  50. Novel Hybrid Composite for UV-Shielding (POSTER)  
S. Li, **M. Toprak**, Y. S. Jo, D. K. Kim, M. Muhammed,  
Materials Research Society Spring Meeting 2005, Mar 28-Apr 1, San-Francisco, USA.
- 

### Graduate Students

#### MSc.:

1. Shanghua Li (2004). Nanoengineering of Particles and Surfaces for Energy Applications, ISRN: KTH/MSE-04/15-SE+CHEM/EX, Royal Institute of Technology, MSE, Stockholm, Sweden
2. Thibault Boisson (2004). Fabrication of nanoparticles and nanofluids for heat transfer applications, ISRN KTH/MSE--04/48--SE+CHEM/EX, Royal Institute of Technology, MSE, Stockholm, Sweden
3. Mahdi Darab (2008). Synthesis and Characterization of Nanostructured Cathode Material (BSCF) for Solid Oxide Fuel Cells (SOFCs), Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
4. Abdullah Khan (2008). Synthesis and Characterization of Nano-structured CoSb3 Thermoelectric Material, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
5. Basil Uthuppu (2008). Synthesis, Characterization and MRI application of Gadolinium Oxide Nanoparticles, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
6. Md. Rezaul Kabir (2009). Control of Morphology of ZnO Nanostructures and Enhancement of Photocatalytic Property by Gold Nanostructure Deposition, TRITA-ICT-EX-2009:153, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
7. Md. Sarower Alam (2009). Synthesis, Characterization and MRI application of MnO Nanoparticles. TRITA-ICT-EX-2009:223, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
8. Mohsin Saleemi (2009). Synthesis and Characterizations of Nanostructured bulk Bismuth Telluride as Thermoelectric material. TRITA-ICT-EX-2009:152, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
9. Song Fei (2009). Optimization of Fabrication Process of Nanostructured Surfaces for enhanced boiling, ICT/MAP/FNM/2008-2, Royal Institute of Technology, MAP, Kista-Stockholm, Sweden
10. Roodabeh Afrasiabi (to be completed in 2010). Microwave synthesis of semiconductor nanostructures. Royal Institute of Technology, MAP, Kista-Stockholm, Sweden

#### PhD:

1. Andrea Fornara (2010). Multifunctional Nanoparticles for Diagnostics and Therapeutic Applications, Royal Institute of Technology, ICT, Stockholm, Sweden.
2. Shanghua Li (2008). Fabrication of Nanostructured Materials for Energy Applications, Royal Institute of Technology, MAP, ICT, Stockholm, Sweden
3. Abhilash Sugunan (halen devam ediyor-2011), Synthesis of Optoelectronic Nanostructures and Nanocomposites for Energy Applications, Royal Institute of Technology, MAP, ICT, Stockholm, Sweden
4. Carmen Vogt (halen devam ediyor-2011), Nanomaterials Engineered for Biomedical applications, Royal Institute of Technology, MAP, ICT, Stockholm, Sweden
5. Mohsin Saleemi (halen devam ediyor-2014), Nanoengineered materials for heat exchange and heat recovery, Royal Institute of Technology, MAP, ICT, Stockholm, Sweden
6. Nader Nikkam (halen devam ediyor-2013), Engineered Nanofluids for heat exchange applications, Royal Institute of Technology, MAP, ICT, Stockholm, Sweden
7. Yichen Zhao (2011 – on-going)



8. Mohsen Yakhshi Tafti (2011 – on-going)

### Teaching Experience

#### Graduate Courses

- 2010-2011 Advanced Projects in Nanomaterials, KTH, Sweden
- 2008-2011 Introduction to Nanomaterials and Nanotechnology, KTH, Sweden
- 2008-2011 Characterization Techniques – Bulk, KTH, Sweden
- 2008-2011 Nanostructured Materials and Self Assembly, KTH, Sweden
- 2007-2008 Introduction to Nanomaterials and Nanotechnology, KTH, Sweden
- 2004-2005 Nanomaterials Characterization Techniques - Bulk, KTH, Sweden
- 2004-2005 Introduction to Nanomaterials and nanotechnology, KTH, Sweden
- 2003-2004 Introductory Chemistry to Materials Science and Engineering, KTH, Sweden

#### Undergraduate Courses

- 2002-2003 Introductory Chemistry, Recitation - övning, KTH, Sweden
- 2000-2002 Introductory Chemistry Lab Supervision, KTH, Sweden
- 1998-1999 General Chemistry, Teaching Assistant, METU, Turkey
- 1996-1998 General Chemistry Lab Supervision, Teaching Assistant, METU, Turkey

#### Reviewer for Journals

1. Advanced Functional Materials
  2. European Polymer Journal
  3. Journal of the Electrochemical Society
  4. Journal of Nanoparticle Research
  5. Journal of Alloys and Compounds
  6. Journal of Magnetism and Magnetic Materials
  7. Journal of Colloids and Interface Science
  8. Journal of Thermal Sciences
  9. Materials Chemistry and Physics
  10. Materials Science and Engineering B
  11. Physics Status Solidi- Rapid Research Letters
  12. SRX Materials Science
  13. Journal of Nanomaterials and Nanotechnology
  14. J Food Chemistry
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