

PROF. YITZHAK MASTAI

Curriculum vitae



Prof. Yitzhak Mastai

Born: 25/08/1966, Israel, married 3 children

SUMMARY

Yitzhak Mastai is a leading chemist who heads a prolific research group that focuses on nanoscale chirality, synthesis, and analysis of chiral nanosurfaces. He has over 165 peer-reviewed articles in print, which were cited many times (google H-index=44). Mastai has published many book chapters and edited 3 books on various aspects of nanomaterials and materials science. Among his previous awards was the Minerva Postdoctoral Fellowship which he received in 2000 and the Yigal Alon fellowship in 2003, for outstanding young researchers of the Israel Academy for higher education. Prof. Mastai served as Chairman of the Chemistry Department at Bar-Ilan University, between 2014 and 2017. He also served as an executive board member of the Israel Chemical Society (ICS), The Israel Vacuum Society (IVS), the editorial board of many Journals, e.g.: Journal of Nanomaterials, Journal Polymers, Israel Journal of Chemistry (IJC).

RESEARCH INTERESTS

Chiral surfaces, chiral crystallization, chiral self-assembled monolayers, supramolecular chemistry, chiral polymers.

Nanomaterials, thin films, water and liquids in nanoporous materials, biomimetic chemistry, crystal engineering.

EDUCATION

1989-1992	B.Sc. in Chemistry, Major: Physical chemistry, Bar-Ilan University.
1992-1995	M.Sc. Department of Materials and Interfaces, Weizmann Institute of Science, Israel.
1995-2000	Ph.D. under the supervision of Prof. Gary Hodes. Title of thesis: " <i>Sono (electro) chemical synthesis of semiconductors and fullerene-like nanoparticles</i> " Department of Materials and Interfaces, Weizmann Institute of Science, Israel.
2000-2002	Postdoctoral associate at Max-Planck-Institute of Colloids and Interfaces, Germany, with Prof. Markus Antonietti.

POSITIONS

	Institute	Title	Research area
2014-2017	Department of Chemistry Bar-Ilan University, Israel	Head of the department	Chirality at the nanoscale.
2014- ... present	Department of Chemistry Bar-Ilan University, Israel.	Full professor	Chirality at the nanoscale.
2008- 2014	Department of Chemistry Bar-Ilan University, Israel.	Associate Professor	Chirality at the nanoscale.
2003-2008	Department of Chemistry Bar-Ilan University, Israel.	Senior lecturer	Chirality at the nanoscale.
1998-1999	Weizmann Institute of Science, Israel.	Lecturer	Colloids and interfaces chemistry.
2002-2003	Max-Planck-Institute of Colloids and Interfaces, Germany.	Group Leader	Antifreeze proteins, Chiral surfaces.

ADMINISTRATION

2005- 2015	Israel chemical society representative to the EuCheMS on chemistry and energy.
2008- 2015	Executive board of the Israel Chemical Society.
2007-2010	Executive board of the Israeli association for crystal growth.
2007-2010	Head of the academic unit for talented youth at the Dean of students, Bar-Ilan University.
2010-2010	Member of the committee of Ph.D. studies, Bar-Ilan University.
2008- 2010	Scientific advisor of high school books in chemistry
2010- present	Member of the teaching committee of the department of chemistry, Bar-Ilan University.
2013-2014	Member of the university scholarship committee.
2010-2014	Head of the committee "academic community" of Bar Ilan University.
2015- present	Executive board of the Israel Vacuum Society (IVS).
2014-2020	Senate member Bar-Ilan University.
2014-2017	Head of the chemistry department at Bar-Ilan University.
2017-2019	Member of the Academic appointment and promotion committee of Bar-Ilan University.
2018-... present	Chairman of the Bar-Ilan University Senior Faculty Association

AWARDS AND FELLOWSHIPS

2021	Vebleo Scientist Award for outstanding researcher
2003-2005	Yigal Alon fellowships for outstanding young researchers, Israel academy for higher education.
2000-2002	Minerva post-doctoral fellowship.
1999	Ph.D. student award, Israel electrochemical society.
1999	Ph.D. research scholarship, European Science Foundation (ESF).

TEACHING

Course in Physical Chemistry and Inorganic Chemistry
Chemistry of Colloids and Surfaces
Introduction to nanomaterials
Advanced Chirality
Advanced laboratory training in Physical Chemistry
Solid-state chemistry

STUDENTS AND POST-DOCS

Past

30 Ph.D. students (until summer 2020)
45 graduate students M.Sc. (until summer 2020)
3 Post-doctoral fellows

Present -

4 Ph.D. students , 4 MSc students and 2 post-doctoral fellows

GRANTS

	Funding Organization	Research Topics	Total (\$)
2003-2005	German Israeli Foundation young scientists.	Polymers mimicking antifreeze proteins.	39,000
2003-2005	Israel Academy for higher education	Yigal Alon fellowship	29,000
2003-2006	Pollack Foundation	Biom mineralization	18,000

2004	Israel Science Foundation.	Laboratory for new faculty member	140,000
2004-2007	Israel Science Foundation.	Hydration of polyelectrolytes and biological macromolecules.	96,000
2006	German-Israeli cooperation.	Miniemulsion polymerization of cyclodextrins nanoporous beads for water purification application	10,000
2007	German-Israeli cooperation	Small-Angle X-Ray Scattering (SAXS) study of water in modified mesoporous silica: applications for desalination systems.	10,000
2007	Israel Science Foundation	Rutherford Backscattering spectrometry	562,451
2007	Ministry of Defense Israel (M.O.D)	Confidential	12,000
2007-2009	Horvitz foundation	Antifreeze proteins: from nature to industry from basic research to business opportunity	80,000
2009	Katz Family Research Grant.	Nanostructured Surfaces for Prevention of Biofilm Formation.	50,000
2007-2010	Israel Science Foundation	Imprinting Chirality in Mesoporous Structures and its Application in Chiral Resolution.	210,000
2011	Israel Science Foundation	Atomic Force Microscope with Raman Spectroscopy.	270,000
2011-2015	Israel Science Foundation	Chiral polymeric nanoparticles for enantioselective applications.	320,000

2013	Collaborative Grant	Biomimetic polymers for passivation of hydroxyapatite plaques.	20,000
2016-2018	Ministry of Defense Israel (M.O.D)	Confidential	150,000
2016-2019	Ministry of Health, ERA - NET	Engineered nanotools for advanced cell therapies.	360,00
2016-2019	Israel Ministry of Economy.	SHPS-Super Hydrophobic Plastic Surfaces.	280,000
2017-2020	German Israeli Foundation.	Enantioselective mesoporous carbon-based on chiral ionic liquids.	495,000
2021-2018	Israel Science Foundation	Chiral metal oxides surface synthesis, characterization and applications.	370,000
2018-2019	Ministry of Defense Israel (M.O.D)	Crystal design of energetic materials	50,000
2019-2020	Ministry of Defense Israel (M.O.D)	Energetic materials	50,000
2021-2023	Ministry of Science & Technology Israel	Deposition of metal oxides on halide perovskites for pv cells	200,000
2021-2025	Israel Science Foundation	Enantioselective crystallization of chiral inorganic crystals	310,00

INVITED
CONFERENCE
LECTURES

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- 1997 Synthesis and Processing of Nano-Particle Materials (NANO), Grenoble, France.
"Electrodeposition of size quantized semiconductor films"
- 1997 Meeting of Avicenne (ESF), University Paul Sabtier, Toulouse, France.
"Selective coatings for solar cooling preparation and characterization"
- 1998 Department of Natural Sciences, University of Cyprus.
"Thin semiconductor films for radiative cooling application"
- 1999 COST Workshop on Innovative Methods in Sonochemistry, Brussels,
"Sonoelectrochemical synthesis of semiconductors nanoparticles"
- 1999 195th Meeting of the American Electrochemical Society, Seattle-Washington, USA.
"Pulse sonoelectrochemical synthesis of semiconductors nanoparticles"
- 1999 3rd Graduate Meeting of the "G.M.J Schmidt, Minerva Center of
"Supramolecular Materials", Caputh
"Synthesis and characterization of nanocrystalline semiconductor films"
- 2000 Porous Semiconductors-Science and Technology (PSST-2000), Madrid
"The use of sonochemistry, and microwave heating for the fabrication of nanoparticles of semiconductors."
- 2001 American Chemical Society -Division of Colloid and Surface Chemistry, Orlando, USA.
"Selective crystallization of racemic crystals by chiral block copolymers."
- 2001 Annual Meeting of the Max-Planck-Institute of Colloids and Interfaces
"Double hydrophilic block copolymers: Anti-freezing agent and induction of chiral selectivity"

- 2002 International Max Planck research school on biomimetic systems
"Water structure and behavior"
- 2002 Pattern Formation by Molecular Self-Organization at Interfaces, Berlin, Germany
"Biomimetic approaches to the study of molecular recognition- chiral discrimination in crystallization"
- 2003 Intense Pulsed Neutron Source Division, Argonne National Laboratory, USA.
"Polymer Mimicking Antifreeze Proteins"
- 2004 Chemistry department, Ben-Gurion University.
"Structure-Function Relationship in Antifreeze Polypeptides"
- 2004 MRS Fall Meeting Warsaw University of Technology.
"Chiral crystallization with polymeric nanoparticles"
- 2004 ERA Chemistry Workshop "Hierarchically organized chemical structures" Ulm.
"Self-assembly of chiral surfaces"
- 2005 Symposium of the Minerva center for microscale and nanoscale particles and film.
"Patterned Chiral Surfaces and Particles"
- 2005 The 70th Meeting of The Israel Chemical Society.
"Enantioselective Crystallization of Some Amino acids with Chiral Polymers"
- 2005 Scanning Probe Microscopy Israel 2005,
"Determination of Surface Chirality by Near-Field Scanning Optical Microscopy"
- 2005 17th International Symposium on Chirality (ISCD-17), Parma, Italy.
"Enantioselective Crystallization on Chiral Surfaces"
- 2006 Chemistry department- Yeshiva University, NY, USA.
"Biom mineralization with block copolymers"

- 2006 Workshop on pulsed neutron scattering for nanoscience ISIS United Kingdom.
"Water in porous silica"
- 2006 Reimund Stadler Minerva Center at the Ben-Gurion University, Israel.
"Enantioselective Crystallization on Patterned Chiral Surfaces and Particles"
- 2006 Minerva Conference on "Advances and Trends in Organic Chemistry" at the Weizmann Institute of Science Israel.
"Crystallization on Chiral Surfaces"
- 2006 Workshop Seeing Matter with X-rays: From Electronic Clouds to Liquid Interfaces, Bar-Ilan.
"Patterned Chiral Surfaces and Particles"
- 2007 Chemistry Department, Tel Aviv University, Israel.
"Crystallization on chiral surfaces"
- 2007 EuCheMS Seminar and Workshop "Europe's Energy Policy - the role of Chemistry" Brussels Belgium.
"Solar energy in Israel"
- 2007 International conference "Chirality at the nanoscale" Sitges, Barcelona, Spain.
"Chiral surfaces"
- 2007 Materials engineering department- Ben-Gurion University, Israel.
"Chiral surfaces preparation, characterization and applications"
- 2007 Department of Chemistry Alcala university, Spain.
"Chirality at the nanoscale"
- 2007 Department of Chemistry Ben-Gurion University Israel.
"Optical characterization of chiral surfaces"
- 2008 Department of Materials Engineering Ben Gurion University, Israel.
"Chiral surfaces"

- 2008 School of Chemistry, University of Birmingham Edgbaston Birmingham United Kingdom.
"Chiral surfaces preparation, characterization and applications"
- 2008 Chirality 2008, 20th International Symposium on Chirality, University of Geneva, Switzerland.
"Chiral surfaces preparation, characterization and applications"
- 2008 Department of Chemistry Ben-Gurion University Israel.
"Enantioselective crystallization on nano-chiral surfaces"
- 2008 Chirality 2008, 20th International Symposium on Chirality, University of Geneva Switzerland.
"Chiral surfaces preparation, characterization and applications"
- 2009 National Meeting of the American Chemical Society Washington DC, USA.
"Crystallization on nano chiral surfaces"
- 2010 Al-Farabi Kazakh National University, Kazakhstan, Almaty, 5 day Intensive course.
"Introduction to nanotechnology"
- 2010 Max Planck Institute for Polymer Research Mainz, Germany,
"Selective chiral crystallization"
- 2010 The University of Konstanz, Department of Chemistry Konstanz Germany,
"Chiral ultracentrifugation"
- 2011 The 2nd international symposium on "Chirality at the Nanoscale Conference", Liverpool United Kingdom.
"Chiral metal oxides nano surfaces."
- 2011 The 23rd International Symposium on Chirality and (ISCD-23) Liverpool United Kingdom.
"Chiral SAM surfaces"
- 2012 The 77th meeting of the Israel Chemical Society.

- "Chiral polymeric nanoparticles for enantioselective applications"
- 2012 The 10th Symposium on Chemical Approaches to Chirality, February 23-24, 2012, Tokyo University of Science, Japan.
- "Chiral Nano surfaces and Nanoparticles: Synthesis, Applications and Challenges" (**Plenary Lecture**)
- 2013 Leibniz Institute for Interactive Materials, Aachen Germany.
- "Chiral polymeric surfaces"
- 2014 Al-Farabi Kazakh National University, Kazakhstan, Almaty, 5-day Intensive course.
- "Nanotechnology"
- 2014 Short Course Atomic Layer Deposition: Fundamentals and Evolving Applications Weizmann Institute of Science, Israel.
- "ALD of chiral nanosized metal oxides surfaces"
- 2015 The 80th meeting of the Israel Chemical Society
- "Chiral nanosized metal oxides surfaces"
- 2015 NSF-BSF workshop on Hybrid Organic-Inorganic Perovskites (HOIPs) Weizmann Institute of Science, Israel.
- "ALD of chiral nanosized metal oxides surfaces"
- 2015 The 27th International Symposium on Chiral Discrimination (Chirality 2015) Boston USA.
- "Chiral thin films of metal oxide"
- 2015 Chairman Session Low dimensional Structures the 33rd Israel Vacuum Society, IVS annual conference
- 2015 "Chirality at the Nanoscale" KU Leuven. Belgium.
- Chiral mesoporous carbon and chiral metal oxides nanofilms"
- 2015 Israel polymers & plastics society (IPPS) Jerusalem.
- "Chiral polymeric nanoparticles; synthesis, and applications"

- 2016 The NCNST-BINA Workshop Nanoscience and Nanotechnology Beijing China
"Chiral mesoporous carbon and chiral metal oxides nanofilms"
- 2016 The 29th Israel Society for Astrobiology and the Study of the Origin of Life Ben-Gurion University.
"Chiral selection on inorganic and organic surfaces."
- 2016 University of Nicosia department of engineering Cyprus.
"Chiral inorganic surfaces"
- 2016 Chirality 2016 Heidelberg, Germany.
Chiral carbons
- 2016 Chairman Session Nanostructures the 34nd Israel Vacuum Society, IVS annual conference
- 2016 Organic chemistry in the Negev – ADAMA - Ben-Gurion University of the Negev Session Chair:
"Pd, Ag and Au in C-H activation: new methodologies for C-C bond formation"
- 2016 The Second International Conference on Polymer Science and Engineering PSE2016, Beijing.
"Chiral micro and nano-sized polymeric particles: synthesis and applications"
- 2017 82nd Annual ICS Meeting Israel.
"Chiral micro and nano-sized polymeric particles synthesis and applications."
- 2017 The Chiroptics 2017 meeting in Munich, Germany.
"Silica and carbon chiral mesoporous materials: synthesis characterization and application"

- 2017 16 th International Conference on Chiroptical Spectroscopy, Rennes, France
"Chiral mesoporous materials: synthesis characterization and application".
- 2017 Chirality 2017 Tokyo Japan.
"Chiral polymeric nano partials"
- 2017 **Session Chair:**
IBP applications in biotechnology and cryobiology. 3rd International Ice Binding Proteins Conference; IBP 2017. Rehovot
- 2017 **Session Chair:**
IVS 2017 the 35th Annual meeting Israel.
Nanomaterials: Advanced Fabrication and Characterization"
- 2017 Iv. Javakhishvili Tbilisi State University Georgia
"Silica and carbon chiral mesoporous materials: synthesis characterization and application."
- 2018 Summer school on nanotechnology, Al-Farabi Kazakh National University
Almaty, Kazakhstan .
- 2018 V International Farabi Readings Al-Farabi Kazakh National University
Almaty, Kazakhstan.
"Chiral mesoporous materials based on silica and carbon: synthesis characterization and application"
- 2018 Chirality 2018 Princeton University
"Chiral polymeric nanomaterials"
- 2018 The 3rd MSE International Symposium: "Advanced Catalysis and Materials"
VISTEC, Wangchan Rayong Thailand
"Chiral mesoporous materials based on silica and carbon: synthesis characterization and application". (**Plenary Talk**).
- 2018 International Conference in Honor of Prof. *Dan Meyerstein's 80th Birthday.*,
Ariel University Israel.

- “Enantioselective Mesoporous Carbon Prepared by Carbonization of Chiral Ionic Liquids ”. (**Plenary Talk**).
- 2019 Bar Ilan's Institute for Nanotechnology and Advanced Materials (BINA) Israel.
- “Chirality in Porous Functional Materials” (**Plenary Talk**).
- 2019 The 17th International Conference on Chiroptical Spectroscopy – Pisa
- “Chiral nanofilms of metal oxides by molecular layer deposition”
- 2019 ChinaNANO 2019, Beijing, China, August 17-19, 2019.
- “Chiral silica and carbon; synthesis characterization and application”
- 2019 The 4th China-Israel Meeting on Nanoscience and Nanotechnology Beijing, China
- “Chiral polymeric micro and nano-size partials “(**Plenary Talk**).
- 2021 Chemical Engineering Department Ben-Gurion University of the Negev
- Chiral nanofilms of metal oxides by molecular layer deposition”
- 2021 Vebleo Webinar on Science, Engineering and Technology
- “Chiral nanofilms of metal oxides by molecular layer deposition” (**Plenary Talk**)

PUBLICATIONS

1. Homyonfer, M.; Mastai, Y.; Hershinkel, M.; Volterra, V.; Hutchison, J. L.; Tenne, R., Scanning tunneling microscope induced crystallization of fullerene-like MoS₂. *Journal of the American Chemical Society* **1996**, *118* (33), 7804-7808.
2. Mastai, Y.; Hodes, G., Size quantization in electrodeposited CdTe nanocrystalline films. *Journal of Physical Chemistry B* **1997**, *101* (14), 2685-2690.
3. Avivi, S.; Mastai, Y.; Hodes, G.; Gedanken, A., Sonochemical hydrolysis of Ga³⁺ ions: Synthesis of scroll-like cylindrical nanoparticles of gallium oxide hydroxide. *Journal of the American Chemical Society* **1999**, *121* (17), 4196-4199.
4. Gal, D.; Mastai, Y.; Hodes, G.; Kronik, L., Band gap determination of semiconductor powders via surface photovoltage spectroscopy. *Journal of Applied Physics* **1999**, *86* (10), 5573-5577.
5. Mastai, Y.; Homyonfer, M.; Gedanken, A.; Hodes, G., Room temperature sonoelectrochemical synthesis of molybdenum sulfide fullerene-like nanoparticles. *Advanced Materials* **1999**, *11* (12), 1010-1013.
6. Mastai, Y.; Polsky, R.; Koltypin, Y.; Gedanken, A.; Hodes, G., Pulsed sonoelectrochemical synthesis of cadmium selenide nanoparticles. *Journal of the American Chemical Society* **1999**, *121* (43), 10047-10052.
7. Palchik, O.; Kataby, G.; Mastai, Y.; Gedanken, A., New method for nanofabrication of structures analogous to "Core-Shell" vesicles. *Advanced Materials* **1999**, *11* (15), 1289.
8. Shafi, K.; Felner, I.; Mastai, Y.; Gedanken, A., Olympic ring formation from newly prepared barium hexaferrite nanoparticle suspension. *Journal of Physical Chemistry B* **1999**, *103* (17), 3358-3360.
9. Zhong, Z. Y.; Mastai, Y.; Koltypin, Y.; Zhao, Y. M.; Gedanken, A., Sonochemical coating of nanosized nickel on alumina submicrospheres and

the interaction between the nickel and nickel oxide with the substrate. *Chemistry of Materials* **1999**, *11* (9), 2350-2359.

10. Avivi, S.; Mastai, Y.; Gedanken, A., A new fullerene-like inorganic compound fabricated by the sonolysis of an aqueous solution of TiCl_3 . *Journal of the American Chemical Society* **2000**, *122* (18), 4331-4334.
11. Avivi, S.; Mastai, Y.; Gedanken, A., Sonohydrolysis of In^{3+} ions: Formation of needlelike particles of indium hydroxide. *Chemistry of Materials* **2000**, *12* (5), 1229-1233.
12. Engelhard, T.; Jones, E. D.; Viney, I.; Mastai, Y.; Hodes, G., Deposition of tellurium films by decomposition of electrochemically-generated H_2Te : application to radiative cooling devices. *Thin Solid Films* **2000**, *370* (1-2), 101-105.
13. Jeevanandam, P.; Koltypin, Y.; Gedanken, A.; Mastai, Y., Synthesis of alpha-cobalt (II) hydroxide using ultrasound radiation. *Journal of Materials Chemistry* **2000**, *10* (2), 511-514.
14. Jeevanandam, P.; Koltypin, Y.; Mastai, Y.; Gedanken, A., Sonochemical synthesis of lead hydroxy bromide needles. *Journal of Materials Chemistry* **2000**, *10* (9), 2143-2146.
15. Kumar, R. V.; Mastai, Y.; Gedanken, A., Sonochemical synthesis and characterization of nanocrystalline paramelaconite in polyaniline matrix. *Chemistry of Materials* **2000**, *12* (12), 3892-3895.
16. Liu, S. W.; Tang, X. H.; Mastai, Y.; Felner, I.; Gedanken, A., Preparation and characterization of iron-encapsulating carbon nanotubes and nanoparticles. *Journal of Materials Chemistry* **2000**, *10* (11), 2502-2506.
17. Liu, S. W.; Zhu, J. J.; Mastai, Y.; Felner, I.; Gedanken, A., Preparation and characteristics of carbon nanotubes filled with cobalt. *Chemistry of Materials* **2000**, *12* (8), 2205-2211.

18. Mastai, Y.; Gal, D.; Hodes, G., Nanocrystal-size control of electrodeposited nanocrystalline semiconductor films by surface capping. *Journal of the Electrochemical Society* **2000**, *147* (4), 1435-1439.
19. Zaban, A.; Aruna, S. T.; Tirosh, S.; Gregg, B. A.; Mastai, Y., The effect of the preparation condition of TiO₂ colloids on their surface structures. *Journal of Physical Chemistry B* **2000**, *104* (17), 4130-4133.
20. Zhong, Z. Y.; Mastai, Y.; Salkar, R. A.; Kolytyn, Y.; Gedanken, A., Preparation and coating of molybdenum oxide on alumina submicrospheres by sonochemical method. *Journal of Materials Research* **2000**, *15* (2), 393-401.
21. Antonietti, M.; Landfester, K.; Mastai, Y., The vision of "Nanochemistry", or is there a promise for specific chemical reactions in nano-restricted environments? *Israel Journal of Chemistry* **2001**, *41* (1), 1-5.
22. Kumar, R. V.; Mastai, Y.; Diamant, Y.; Gedanken, A., Sonochemical synthesis of amorphous Cu and nanocrystalline Cu₂O embedded in a polyaniline matrix. *Journal of Materials Chemistry* **2001**, *11* (4), 1209-1213.
23. Mastai, Y.; Diamant, Y.; Aruna, S. T.; Zaban, A., TiO₂ nanocrystalline pigmented polyethylene foils for radiative cooling applications: Synthesis and characterization. *Langmuir* **2001**, *17* (22), 7118-7123.
24. Pang, G. S.; Sominska, E.; Colfen, H.; Mastai, Y.; Avivi, S.; Kolytyn, Y.; Gedanken, A., Preparing a stable colloidal solution of hydrous YSZ by sonication. *Langmuir* **2001**, *17* (11), 3223-3226.
25. Colfen, H.; Qi, L. M.; Mastai, Y.; Borger, L., Formation of unusual 10-petal BaSO₄ structures in the presence of a polymeric additive. *Crystal Growth & Design* **2002**, *2* (3), 191-196.
26. Mastai, Y.; Polarz, S.; Antonietti, M., Silica-carbon nanocomposites: A new concept for the design of solar absorbers. *Advanced Functional Materials* **2002**, *12* (3), 197-202.

27. Mastai, Y.; Rudloff, J.; Colfen, H.; Antonietti, M., Control over the structure of ice and water by block copolymer additives. *Chemphyschem* **2002**, *3* (1), 119-123.
28. Mastai, Y.; Sedlak, M.; Colfen, H.; Antonietti, M., The separation of racemic crystals into enantiomers by chiral block copolymers. *Chemistry-a European Journal* **2002**, *8* (11), 2430-2437.
29. Nikitenko, S. I.; Koltypin, Y.; Mastai, Y.; Koltypin, M.; Gedanken, A., Sonochemical synthesis of tungsten sulfide nanorods. *Journal of Materials Chemistry* **2002**, *12* (5), 1450-1452.
30. Rana, R. K.; Mastai, Y.; Gedanken, A., Acoustic cavitation leading to the morphosynthesis of mesoporous silica vesicles. *Advanced Materials* **2002**, *14* (19), 1414-1418.
31. Dimova, R.; Lipowsky, R.; Mastai, Y.; Antonietti, M., Binding of polymers to calcite crystals in water: Characterization by isothermal titration calorimetry. *Langmuir* **2003**, *19* (15), 6097-6103.
32. Dobson, K. D.; Hodes, G.; Mastai, Y., Thin semiconductor films for radiative cooling applications. *Solar Energy Materials and Solar Cells* **2003**, *80* (3), 283-296.
33. Hornebecq, V.; Mastai, Y.; Antonietti, M.; Polarz, S., Redox behavior of nanostructured molybdenum oxide - Mesoporous silica hybrid materials. *Chemistry of Materials* **2003**, *15* (19), 3586-3593.
34. Montenegro, R.; Antonietti, M.; Mastai, Y.; Landfester, K., Crystallization in miniemulsion droplets. *Journal of Physical Chemistry B* **2003**, *107* (21), 5088-5094.
35. Pol, V. G.; Motiei, M.; Gedanken, A.; Calderon-Moreno, J.; Mastai, Y., Sonochemical deposition of air-stable iron nanoparticles on monodispersed carbon spherules. *Chemistry of Materials* **2003**, *15* (6), 1378-1384.

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38. Yu, S. H.; Colfen, H.; Mastai, Y., Formation and optical properties of gold nanoparticles synthesized in the presence of double-hydrophilic block copolymers. *Journal of Nanoscience and Nanotechnology* **2004**, *4* (3), 291-298.
39. Katzen, D.; Levy, E.; Mastai, Y., Thin films of silica-carbon nanocomposites for selective solar absorbers. *Applied Surface Science* **2005**, *248* (1-4), 514-517.
40. Menahem, T.; Mastai, Y., Chiral soluble polymers and microspheres for enantioselective crystallization. *Journal of Polymer Science Part a-Polymer Chemistry* **2006**, *44* (9), 3009-3017.
41. Patra, C. R.; Patra, S.; Gabashvili, A.; Mastai, Y.; Kolytyn, Y.; Gedanken, A.; Palchik, V.; Slifkin, M. A., A microwave route for the synthesis of nanoflakes and dendrites-type, beta-In₂S₃ and their characterization. *Journal of Nanoscience and Nanotechnology* **2006**, *6* (3), 845-851.
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43. Dressler, D. H.; Landau, A.; Zaban, A.; Mastai, Y., Sub-micrometer polarimetry of chiral surfaces using near-field scanning optical microscopy. *Chemical Communications* **2007**, (9), 945-947.
44. Dressler, D. H.; Mastai, Y., Enantioselective crystallization of histidine on chiral self-assembled films of cysteine. *Journal of Colloid and Interface Science* **2007**, *310* (2), 653-660.
45. Dressler, D. H.; Mastai, Y., Chiral crystallization of glutamic acid on self assembled films of cysteine. *Chirality* **2007**, *19* (5), 358-365.

46. Dressler, D. H.; Mastai, Y., Controlling polymorphism by crystallization on self-assembled multilayers. *Crystal Growth & Design* **2007**, *7* (5), 847-850.
47. Gabashvili, A.; Medina, D. D.; Gedanken, A.; Mastai, Y., Templating mesoporous silica with chiral block copolymers and its application for enantioselective separation. *Journal of Physical Chemistry B* **2007**, *111* (38), 11105-11110.
48. Kun, H.; Byk, G.; Mastai, Y., Effects of antifreeze protein fragments on the properties of model membranes. *Biopolymers* **2007**, *88* (4), 637-637.
49. Kun, H.; Mastai, Y., Activity of short segments of type I antifreeze protein. *Biopolymers* **2007**, *88* (6), 807-814.
50. Medina, D. D.; Goldshtein, J.; Margel, S.; Mastai, Y., Enantioselective crystallization on chiral polymeric microspheres. *Advanced Functional Materials* **2007**, *17* (6), 944-950.
51. Shinitzky, M.; Shvalb, A.; Elitzur, A. C.; Mastai, Y., Entrapped energy in chiral solutions: Quantification and information capacity. *Journal of Physical Chemistry B* **2007**, *111* (37), 11004-11008.
52. Baruch, E.; Belostotskii, A. M.; Mastai, Y., Relationship between the antifreeze activities and the chemical structures of polyols. *Journal of Molecular Structure* **2008**, *874* (1-3), 170-177.
53. Dressler, D. H.; Hod, I.; Mastai, Y., Stabilization of alpha-L-glutamic acid on chiral thin films - A theoretical and experimental study. *Journal of Crystal Growth* **2008**, *310* (7-9), 1718-1724.
54. Flegler, Y.; Dressler, D. H.; Mastai, Y.; Rosenbluh, M., *Surface enhanced Raman spectroscopy of aromatic compounds on silver nanoclusters*. 2008; p 2.
55. Kun, H.; Minnes, R.; Mastai, Y., Effects antifreeze peptides on the thermotropic properties of a model membrane. *Journal of Bioenergetics and Biomembranes* **2008**, *40* (4), 389-396.

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