

# **SYMPOSIUM S**

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**Novel Routes of Solution Processing**

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## Symposium S(1): Novel Routes of Solution Processing

**Level 3, Room 305 (Mon - Wed), Level 3, Room 311 (Thu)**

Mon, 29-Jun-09	Tue, 30-Jun-09	Wed, 1-Jul-09	Thu, 2-Jul-09	Fri, 3-Jul-09
	(08:30 - 09:15) Plenary Lecture 2 Peter Doherty	(08:30 - 09:15) Plenary Lecture 4 John Pendry	(08:30 - 09:15) Plenary Lecture 6 Hartmut Michel	
(09:00 - 09:45) Opening Ceremony	(09:15 - 10:00) Plenary Lecture 3 Andrew Wee	(09:15 - 10:00) Plenary Lecture 5 Chad Mirkin	(09:15 - 10:00) Plenary Lecture 7 Akihisa Inoue	(09:00 - 09:45) Plenary Lecture 8 Jean-Marie Basset
(09:45 - 10:30) Plenary Lecture 1 Peter Gruenberg	(10:00 - 10:30) Coffee Break			(09:45 - 10:30) Plenary Lecture 9 Frederick Lange
(10:30 - 11:00) Coffee Break			/	(10:30 - 11:00) Coffee Break
(11:00 - 12:45) <b>Session S1-S1</b>	(10:30 - 12:45) <b>Session S1-S4</b>	(10:30 - 12:45) <b>Session S1-S6</b>		(11:00 - 12:15) <b>Session S1-S12</b>
(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture James L. Hedrick	(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture Martyn Poliakoff	(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture Karl U. Kainer	(12:30 - 14:00) Lunch (13:00 - 14:30) Panel Discussion	(13:00 - 14:30) Closing & Poster Award Ceremony Lunch
(14:00 - 16:15) <b>Session S1-S2</b>	(14:00 - 16:30) <b>Session S-S5 POSTER SESSION</b>	(14:00 - 15:30) <b>Session S1-S7</b>	(14:30 - 16:00) <b>Session S1-S10</b>	
(16:15 - 16:30) Break		(15:30 - 18:00) <b>Session S1-S8</b>		
(16:30 - 18:00) <b>Session S1-S3</b>	/		(16:00 - 19:00) <b>Session S1-S11</b>	
/	(18:00 - 20:00) Public Lectures @ UCC Peter Doherty Peter Gruenberg	/		
		(19:00 - 20:00) Public Lecture @ UCC Hartmut Michel	(19:00 - 22:00) Conference Banquet @ Suntec	

## Symposium S(2): Novel Routes of Solution Processing

Level 3, Room 313

Mon, 29-Jun-09	Tue, 30-Jun-09	Wed, 1-Jul-09	Thu, 2-Jul-09	Fri, 3-Jul-09
	(08:30 - 09:15) Plenary Lecture 2 Peter Doherty	(08:30 - 09:15) Plenary Lecture 4 John Pendry	(08:30 - 09:15) Plenary Lecture 6 Hartmut Michel	
(09:00 - 09:45) Opening Ceremony	(09:15 - 10:00) Plenary Lecture 3 Andrew Wee	(09:15 - 10:00) Plenary Lecture 5 Chad Mirkin	(09:15 - 10:00) Plenary Lecture 7 Akihisa Inoue	(09:00 - 09:45) Plenary Lecture 8 Jean-Marie Basset
(09:45 - 10:30) Plenary Lecture 1 Peter Gruenberg	(10:00 - 10:30) Coffee Break			(09:45 - 10:30) Plenary Lecture 9 Frederick Lange
(10:30 - 11:00) Coffee Break	(11:15 - 12:45) <b>Session S2-S4</b>	(11:15 - 12:45) <b>Session S2-S6</b>		(10:30 - 11:00) Coffee Break
(11:45 - 12:30) <b>Session S2-S1</b>				
(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture James L. Hedrick	(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture Martyn Poliakoff	(12:30 - 14:00) Lunch (13:00 - 13:45) Theme Lecture Karl U. Kainer	(12:30 - 14:00) Lunch  (13:00 - 14:30) Panel Discussion	(13:00 - 14:30) Closing & Poster Award Ceremony Lunch
(14:00 - 16:15) <b>Session S2-S2</b>	(14:00 - 16:30) <b>Session S-S5 POSTER SESSION</b>	(14:00 - 15:30) <b>Session S2-S7</b>		
(16:15 - 16:30) Break		(15:30 - 18:00) <b>Session S2-S8</b>		
(16:30 - 18:00) <b>Session S2-S3</b>				
	(18:00 - 20:00) Public Lectures @ UCC Peter Doherty Peter Gruenberg	(19:00 - 20:00) Public Lecture @ UCC Hartmut Michel	(19:00 - 22:00) Conference Banquet @ Suntec	

### S1-S1

Monday, 29 June 2009  
11:00-12:45  
Level 3, Room 305

- 11:00 KN-01  
Title not available at time of print  
Anthony CHEETHAM
- 11:45 IN-01 A00980-01838 pg S25  
Development of the Next Generation of Si, Ti, Nb and Ta Precursors for Environmentally Benign Synthesis of Nanophotoceramic Materials  
Masato KAKIHANA, Makoto KOBAYASHI, Yoshihito SUZUKI, Valery PETRYKIN, Koji TOMITA
- 12:15 ORAL-01 A02729-04700 pg S58  
Supercritical Hydrothermal Synthesis of Organic-Inorganic Hybrid Nanoparticles -Mechanistic Study-  
Tadafumi ADSCHIRI
- 12:30 ORAL-02 A00080-00322 pg S11  
Magnetic Properties and Magnetoelectric Effect Measurement at Room Temperature in (x) Ni<sub>0.5</sub> Zn<sub>0.5</sub> Fe<sub>2</sub>O<sub>4</sub> + (1-x)PZT Composites  
Lalasing R. NAIK, Bantesh K. BAMMANAVAR, Geeta N. CHAVAN, Baburao K. CHOUGULE

### S2-S1

Monday, 29 June 2009  
11:45-12:45  
Level 3, Room 313

- 11:45 IN-05 A01069-01860 pg S26  
Solution Processing of Functional Oxides: Nanowires, Nanotubes, and Thin Films  
Nitin PADTURE
- 12:15 ORAL-12 A00576-01050 pg S20  
Silica Nanocoating of Particles by Sonogel Process  
Quan CHEN, Chris BOOTHROYD, Gim Hong TAN, Nelvi SUTANTO, Andrew Mcintosh SOUTAR, Xian Ting ZENG
- 12:30 ORAL-13 A00619-02021 pg S21  
Effect of Chemical Bath Deposition Techniques on Size and Morphology of PbS Nanoparticles  
Tapas CHAUDHURI, Jayesh PATEL, Chaturbhai PATEL

### S1-S2

Monday, 29 June 2009  
14:00-16:15  
Level 3, Room 305

- 14:00 IN-02 A01247-02300 pg S30  
Solution Driven Kinetics of 1.13 nm Tobermorite: An In-situ Neutron-diffraction Study under Hydrothermal Conditions  
Thomas FEHR, Saskia BERNSTEIN
- 14:30 ORAL-03 A00085-00326 pg S11  
Electrical Properties and Magnetoelectric Effect in Ni<sub>0.2</sub>Co<sub>0.8</sub>Fe<sub>2</sub>O<sub>4</sub> + PbZr<sub>0.8</sub>Ti<sub>0.2</sub>O<sub>3</sub> Particulate Composites  
Bantesh K. BAMMANAVAR, Lalasing R. NAIK, Rangappa B. PUJAR, Baburao K. CHOUGULE
- 14:45 ORAL-04 A00233-00540 pg S13  
Morphological Changes in Mesoporous Titanium Dioxide with Variation in the Annealing Temperature  
Shweta AGARWALA, G. W. HO
- 15:00 ORAL-05 A00302-00782 pg S14  
A Single-Step Route Towards Au/TiO<sub>2</sub> Composite Thin Films by Spray Deposition  
Weiliang WANG, Kevin CASSAR, Steve SHEARD, Peter DOBSON, Peter BISHOP, Ivan PARKIN, Simon HURST
- 15:15 IN-03 A00863-01500 pg S24  
Bioinspired Synthesis of Nanocomposites Using Self-assembling Block Copolymers  
Yusuf YUSUFOGLU, Yanyan HU, Mathumai KANAPATHIPILLAI, Matthew KRAMER, Eren KALAY, Klaus SCHMIDT-ROHR, Surya MALLAPRAGADA, Mufit AKINC
- 15:45 IN-04 A03015-05144 pg S68  
Nanostructured Functional Perovskite Oxides  
Saluru Babu KRUPANIDHI

### S2-S2

Monday, 29 June 2009  
14:00-16:15  
Level 3, Room 313

- 14:00 IN-06 A01581-02756 pg S35  
Self-organized TiO<sub>2</sub> Nanostructures (Nanotubes, Nanobamboo, Nanolace): Formation, Properties, Applications  
Patrik SCHMUKI
- 14:30 ORAL-14 A00635-01143 pg S22  
Effect of Titanium on the As-cast Microstructure of Hypereutectic High Chromium Cast Iron  
Zhifu HUANG, Jiandong XING, Yimi GAO

14:45 ORAL-15 A00733-01297 pg S23  
Synthesis, Crystal Structure and NLO Properties of a  
Mixed Crystal  $K1-x(NH_4)_xH_2PO_4$  ( $x = 0.5$ )  
Shanmugasundaram PARTHIBAN, Subbiah  
MEENAKHSISUNDARAM

15:00 IN-07 A01852-04375 pg S39  
A Window into Hydrocarbon Synthesis Pathways at  
High Pressures and Temperatures  
Anurag SHARMA

15:30 ORAL-16 A00792-01386 pg S23  
Silver Nanoplates: Synthesis, Growth Mechanism and  
Functionality  
Xuchuan JIANG

15:45 ORAL-17 A00967-01708 pg S25  
Bi-layer Ceramic Composite Components of Different  
Porosity by PIM  
Su Xia ZHANG, Zi Yan ONG, Tao LI, Qing Fa LI,  
Siew Fei POOK

16:00 ORAL-18 A01055-01831 pg S26  
Controlling the Fabrication of Nano-particles Using  
Continuous Flow Spinning Disc Processing  
Suk Fun CHIN, Karel HARTLIEB, Swaminathan IYER,  
Martin SAUNDERS, Colin RASTON

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### S1-S3

Monday, 29 June 2009  
16:30-18:00  
Level 3, Room 305

16:30 ORAL-06 A00342-00635 pg S14  
Chemical Epitaxy of PbSe and PbS – From  
Nanocrystalline to Monocrystalline Thin Films  
Yuval GOLAN

16:45 ORAL-07 A00363-00664 pg S15  
Ultrathin Gold Nanowires Formed in Solution  
Xianmao LU, Younan XIA

17:00 ORAL-08 A00391-01901 pg S15  
Growth and High Ultraviolet Photosensitivity of ZnO  
Nanowires Grown by Aqueous Solution Method:  
Role of Surface States and Defects in Photocarrier  
Relaxation  
Mrinal DUTTA, Ashoke BERA, Durga BASAK

17:15 ORAL-09 A00419-01373 pg S15  
Intracrystalline Oxidation of Inorganic Anions  
Intercalated in Layered Double Hydroxides  
Nygil THOMAS, Michael RAJAMATHI

17:30 ORAL-10 A00472-01710 pg S16  
Hydrothermal Synthesis of  $TiO_2(B)$ , Anatase and  
Rutile Photocatalysts using a Novel Water-Soluble  
Titanium Complex  
Makoto KOBAYASHI, Valery PETRYKIN, Masato  
KAKIHANA, Koji TOMITA

17:45 ORAL-11 A00514-00939 pg S18  
Alkalinity, Sample Height and Annealing Effects on  
the Structure and Electrical Properties of  $BiFeO_3$   
Films on  $SrTiO_3$  Substrate by a Hydrothermal  
Method  
Alicia HUANG, Santiranjana SHANNIGRAHI,  
Chee King TAN, Pallathadka Kumari PRAMODA,  
Gregory Kia Liang GOH

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### S2-S3

Monday, 29 June 2009  
16:30-18:00  
Level 3, Room 313

16:30 ORAL-19 A01131-01939 pg S27  
Phosphonated Calixarene Tailoring of Very Small  
Silver Nanoparticles  
Karel HARTLIEB, Martin SAUNDERS, Colin RASTON

16:45 ORAL-20 A01155-01988 pg S28  
Hydrothermal Growth of Well-aligned ZnO Nanorod  
Arrays on Spinel ( $MgAl_2O_4$ ) by using Nanopattern  
Template  
Hong Quang LE, Kia Liang Gregory GOH,  
Soo Jin CHUA, Jing Hua TENG, Ah Bian CHEW,  
Swee Kuan LIM

17:00 ORAL-21 A01159-01978 pg S28  
Rational Hydrothermal Route to Functional Metal  
Oxide Nanoparticles  
Takaaki TANIGUCHI, Tomoaki WATANABE,  
Masahiro YOSHIMURA, Nobuhiro MATSUSHITA

17:15 ORAL-22 A01176-02012 pg S30  
Effects of Post Growth Treatments on the  
Hydrothermally Epitaxial  $KNbO_3$  Thin Films  
Albertus Denny HANDOKO, Gregory K. L. GOH

17:30 ORAL-23 A01426-02468 pg S32  
Synthesis and Characterization of Visible Light Active  
Nano-sized Fe-doped  $TiO_2$  Photocatalysts  
Sukon PHANICHPHANT, Natda WETCHAKUN

17:45 ORAL-24 A01426-02608 pg S32  
Synthesis of  $WO_3/ZnO$  Nanocomposites by Flame  
Spray Pyrolysis for Use as Photocatalyst  
Sukon PHANICHPHANT, Natda WETCHAKUN,  
Chawarat SIRIWONG

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**S1-S4**

Tuesday, 30 June 2009  
10:30-12:45  
Level 3, Room 305

**10:30 KN-02 A01831-03512** pg S39  
**Soft Processing for Cermics: Single-step Fabrication of Nano-Structured Ceramics (Films, Integrated Layers and Patterns) from Solution without Firing**  
Masahiro YOSHIMURA, Ruwan GALLAGE, Tomoaki WATANABE, Nobuhiro MATSUSHITA

**11:15 IN-08 A00810-03776** pg S24  
**Polyscale Processing and Technology for Development of NIR Bioimaging System**  
Kohei SOGA, K. BYRAPPA

**11:45 IN-09 A02540-04356** pg S54  
**Hydrothermal Synthesis of Complex Transition-Metal Oxides: Control of Crystal Chemistry for Advanced Materials Applications**  
Richard WALTON

**12:15 ORAL-25 A01438-02498** pg S33  
**Microbial Synthesis of Gold Nanoparticles and Nanoplates Using the Metal-reducing Bacterium *Shewanella* Species**  
Takashi OGI, Norizoh SAITOH, Yasuhiro KONISHI

**12:30 ORAL-26 A01477-02592** pg S33  
**Bonding of Gold Nanoparticles on ZnO Nanostructures**  
P. M. ANEESH, K. A. VANAJA, M. K. JAYARAJ

**S2-S4**

Tuesday, 30 June 2009  
11:15-12:45  
Level 3, Room 313

**11:15 IN-10 A03029-05162** pg S70  
**Open Chiral Coordination Polymers and Oligomers using Tartrate Building Blocks**  
Ian D. WILLIAMS, Herman H-Y. SUNG, Pokka P-K PANG, Chun-Lung CHOI, Alex S-F. AU YEUNG, Samadara THUSHARI

**11:45 IN-11 A03017-05147** pg S69  
**Chemically Designed Nanoparticles and Nanowires: Controlled Growth, Applications and Devices**  
Sanjay MATHUR

**12:15 ORAL-27 A01499-03848** pg S34  
**Nanocoating Fe<sub>2</sub>O<sub>3</sub> Powders with a Homogeneous Thin ZrO<sub>2</sub> Shell**  
Yanfeng GAO, Feng ZHAO, Hongjie LUO

**12:30 ORAL-28 A01509-02631** pg S34  
**Fabrication of Crystallized ZnO Film with Dense Columnar Structure at 90°C by Spin-spray Technique**  
Hajime WAGATA, Nobuhiro MATSUSHITA

**S1-S5: Poster Session**

Tuesday, 30 June 2009  
14:00-16:30  
Level 3, Gallery

**S-S5.01(P) A00069-01400** pg S11  
**Formation of Titania Nano-Layer on Upconversion Emissive Ceramic Particles**  
Tomohiro AIBARA, Kohei SOGA

**S-S5.02(P) A00223-00420** pg S12  
**Precipitation Process Improvement of Ultrafine CaCO<sub>3</sub> Powders**  
Irinela CHILIBON, Carmencita MATEESCU, Raluca ISOPESCU

**S-S5.03(P) A00231-00548** pg S12  
**Synthesis of Ceramic Nanophosphors for Upconversion Bioimaging**  
Venkatachalam NALLUSAMY, Yoshihito OKUMURA, Kohei SOGA

**S-S5.04(P) A00290-00529** pg S13  
**Novel Hydrothermal Synthesizing Process and Characteristics Analysis of Nanosized Pt Particles**  
Jeng-Shin MA, Chung-Hsin LU

**S-S5.05(P) A00300-00546** pg S14  
**Synthesis and Luminescence Characteristics of Tin Oxide Phosphors**  
Fu-Shan CHEN, Cheng-Tao LEE, Chung-Hsin LU, Nai-Yun LIANG, Yeu-Jye CHIEN

**S-S5.06(P) A00476-01986** pg S16  
**Low-Temperature Wet Chemical Precipitation of YVO<sub>4</sub>:Bi<sup>3+</sup>,Eu<sup>3+</sup> Nanophosphors via Citrate Precursors**  
Satoru TAKESHITA, Tetsuhiko ISOBE, Tomohiro SAWAYAMA, Seiji NIKURA

**S-S5.07(P) A00481-01894** pg S18  
**Continuous Measurement of Carbon Dioxide Concentration in Aqueous Solution as Decomposition Products on Titanium Dioxide Photocatalyst by Total Organic Carbon Analyzer**  
Hiroko HASE, Norihisa KAWAMURA, Toru NONAMI

**S-S5.08(P) A00556-02331** pg S19  
**Microwave Assisted Synthesis of ZnS Nanoparticles and its Characterization**  
Milind DESHPANDE, Nilesh PANDYA, Manoj PARMAR

- S-S5.09(P) A00574-01049** pg S20  
**Static Ion Testing System(SITS)**  
Jimei WANG, Zhijiang JI, Jing WANG
- S-S5.10(P) A00601-01095** pg S20  
**A Simple and Effective Process for Fabrication of Mg<sub>4</sub>Nb<sub>2</sub>O<sub>9</sub> Ceramics**  
Yi-Cheng LIOU, Zong-Sian TSAI, Wei-Ting LI, Ying-Jhih WANG
- S-S5.11(P) A00601-01097** pg S21  
**Synthesis of Cu(Al,Fe)O<sub>2</sub> Thermoelectric Ceramics by a Reaction-Sintering Process**  
Yi-Cheng LIOU, Hong-Chou TSAI, Wen-Chou TSAI, Uang-Ru LEE
- S-S5.12(P) A00622-01127** pg S21  
**Solvothermal Assisted Sol-gel Coating for Titania Nanoparticles by Silica Shell**  
Ahmed M. EL-TONI, Shu YIN, Tsugio SATO
- S-S5.13(P) A00681-03129** pg S22  
**Electrolytic Synthesis of Ru (III)-doped TiO<sub>2</sub> Powder and Kinetic Study for the Degradation of Indigocaramine Dye and Industrial Effluent**  
Meenakshi PULLANGADA GANESH, Chaitanya Lakshmi GIRIGOWDA, Byrappa KULLAIAH, Ananda SANNAIAH
- S-S5.14(P) A00684-01237** pg S22  
**Extraction of Biomaterial from the Medicinal Plant and Preparation of Ru-Biomaterial: A Study of Biological Activity**  
Srilatha BAGIVALU RAJANNAGOWDA, Chaitanya Lakshmi GIRIGOWDA, Kullaiah BYRAPPA, Sannaiah ANANDA
- S-S5.15(P) A00685-01239** pg S23  
**Synthesis of Ru (III) Doped Ag<sub>2</sub>O Nanocomposites by Electrolytic Method and Degradation Study of Acid-violet Dye and Industrial Effluent**  
Chaitanya Lakshmi GIRIGOWDA, Byrappa KULLAIAH, Ananda SANNAIAH
- S-S5.16(P) A00686-01240** pg S23  
**Electrolytic Synthesis of Ru (III)-doped ZnO Powder and Kinetic Study for the Degradation of Indigocaramine Dye and Industrial Effluent**  
Ananda SANNAIAH, Chaitanya Lakshmi GIRIGOWDA, Byrappa KULLAIAH
- S-S5.17(P) A01124-01970** pg S26  
**Synthesis and Properties of Nanoparticle-modified Polymers from Aqueous Solutions**  
Shamshiya AMERKHANOVA, Rustam SHLYAPOV, Aitolkyn UALI
- S-S5.18(P) A01124-02000** pg S27  
**Solution Chemistry of 1-methyl-4-[diethylamido-(4'-phenylthiazolyl -2'-amido) phosphono] Acetic Aldehyde with Metal Ions of Biological Interest**  
Shamshiya AMERKHANOVA, Rustam SHLYAPOV, Aitolkyn UALI
- S-S5.19(P) A01155-02061** pg S28  
**Fabrication of Zinc Oxide Nanorods for Using in Dye Sensitized Solar Cells**  
Swee Kuan LIM, Hong Quang LE, Kia Liang Gregory GOH, Soo Jin CHUA
- S-S5.20(P) A01164-03456** pg S29  
**Flower-Shaped CuO Nanostructures Grown in Solution: Structural, Photocatalytic and XANES Studies**  
Mohammad VASEEM, Ahmad UMAR, Sang Hoon KIM, Yoon Bong HAHN
- S-S5.21(P) A01164-03458** pg S29  
**Synthesis and Characterization of ZnO/NiO Composite Nanoparticles via Solution Process**  
Mohammad VASEEM, Dong Min HONG, Yoon Bong HAHN
- S-S5.22(P) A01169-01999** pg S29  
**Epitaxial Growth of ZnO Nanorods on Spinel Substrate by using Hydrothermal Synthesis**  
Laura-Lynn LIEW, Hong Quang LE, Gregory Kia Liang GOH, Soo Jin CHUA
- S-S5.23(P) A01192-02050** pg S30  
**Time-varying Characteristic in Template Removal from Single Crystal Mesoporous Silica by Solution Plasma**  
Panuphong POOTAWANG, Nagahiro SAITO, Osamu TAKAI
- S-S5.24(P) A01348-02357** pg S31  
**Modified Sol-gel Synthesis and Characterization of Nano-sized Titanium Dioxide: Its Photocatalytic Performance**  
Natda WETCHAKUN, Sukon PHANICHPHANT
- S-S5.25(P) A01384-02472** pg S32  
**Synthesis, Optical Properties of Zinc Oxide Nanoparticles by Sonochemical Method**  
Pimjai SAENKAWAMSAWANG, Samuk PIMANPAENG, Vittaya AMORNKITBAMRUNG, Santi MAENSIRI
- S-S5.26(P) A01536-04340** pg S35  
**Synthesis and Optical Properties of PVP/PVA Capped Silver Ion Doped Cadmium Sulphide Nanocrystals**  
Saravanan LAKSHMANAN, Raghavan C. M. R., Jayavel RAMASAMY, Pandurangan A.

- S-S5.27(P) A01641-02876** pg S35  
**Formation of Calcium Titanate Layer on Ti-based Bulk Metallic Glass by Hydrothermal-electrochemical Method for Biomedical Application**  
Rieko ITO, Naota SUGIYAMA, Takeshi WADA, Xinmin WANG, Masahiro YOSHIMURA, Akihisa INOUE, Nobuhiro MATSUSHITA
- S-S5.28(P) A01655-03373** pg S36  
**Free-Standing Nanocomposite Multilayers with Various Length-scales, Adjustable Internal Structures and Functionalities**  
Seryun LEE, Bokyoung LEE, Jinhan CHO
- S-S5.29(P) A01725-03020** pg S37  
**Rational Control of Openings in Polymer Nanocavities**  
Li Huey TAN, Hongyu CHEN
- S-S5.30(P) A01736-03018** pg S38  
**Synthesis of Cuprous Oxides with Different Morphologies**  
Weiwei ZHOU, Ting YU, Hongjin FAN
- S-S5.31(P) A01739-03026** pg S38  
**Controlled Fabrication of Gold@conductive Polymers Core/Shell Structures**  
Shuangxi XING, Hongyu CHEN
- S-S5.32(P) A01773-03171** pg S38  
**Effects of dc Bias and Uniaxial Compressive Stress on Giant Dielectric Properties of Copper (II) Oxide Ceramics Prepared by a Simple PVA Sol-gel Method**  
Thanin PUTJUSO, Prapan MANYUM, Theerapon YAMWONG, Santi MAENSIRI
- S-S5.33(P) A01903-03283** pg S41  
**Fabrication and Characterization of Electrospun  $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  Nanofibers**  
Rattakarn YENSANO, Santi MAENSIRI
- S-S5.34(P) A01991-03434** pg S42  
**Reaction Temperature and Molar Concentration-Dependent Growth of Vertically-aligned ZnO Nanorods by Wet Chemical Process**  
Eun Won LEE, Jeong Hyun KIM, Sang Hoon KIM, Yoon Bong HAHN
- S-S5.35(P) A02067-03553** pg S45  
**Ultrasonic Synthesis and Electroluminescent Property of Poly(p-phenylenevinylene) (PPV) Derivatives**  
Wen DING, Xingwu SHI, Xiangdong DING, Chao HUANG, Qunfeng QIU, Baorong ZHU, Guojun BIE, Chunliang LIU, Xun HOU
- S-S5.36(P) A02098-03615** pg S46  
**Effect of Diethylen Glycol (DEG) on the Formation Mechanism of  $\text{BaCO}_3$  Nano-particles Synthesized in Water/Diethylen Glycol Mixed Solvent by Chemical Method**  
Motahare ASGARI
- S-S5.37(P) A02182-03743** pg S46  
**Lead Titanate Nanotube Arrays Synthesized by Hydrothermal Method**  
Xiaohui WANG, Longtu LI, Yang YANG, Caifu ZHONG
- S-S5.38(P) A02303-03951** pg S49  
**Crystal Growth of a Chalcone Derivative in Solution**  
Dharmaprakash SAMPYADY, Ravindra H.
- S-S5.39(P) A02316-03957** pg S49  
**Hydrothermal Synthesis and Characterization of  $\text{V}_2\text{O}_5$  Nanobelts**  
DhayaL Raj ALPHONSE, Suresh Kumar PALANISWAMY, Sabari Arul NARAYANASAMY, Mangalaraj DEVANESAN, Nataraj DEVARAJ
- S-S5.40(P) A02394-04242** pg S51  
**Sinterbility and Relaxor Behavior of  $\text{Ba}(\text{Ti}, \text{Zr})\text{O}_3$  and  $\text{Ba}(\text{Ti}, \text{Sn})\text{O}_3$  Nanopowders Prepared by Hydrothermal Process**  
Koji KAJIYOSHI, Lihong XUE, Kazuyo ONISHI, Kana HORIUCHI
- S-S5.41(P) A02400-04101** pg S51  
**Preparation and Characterization of Nano Titania Particles Coated Mesoporous Silica**  
Diptiranjana SAHU, L. Y. HUNG, Sheng-Chang WANG, Jow-Lay HUANG
- S-S5.42(P) A02410-04114** pg S52  
**Fabrication of CIGS Nano-Particles and CIGS Films by using Chemical Bath Fabrication: Potential Applications of CIGS Solar Cell**  
Ki-Bong SONG, Jeong-Dae SUH, Se-Jin AHN, Jae-Ho YOON, Kyung Hoon YOON
- S-S5.43(P) A02427-04292** pg S52  
**Fiber-rounding-hole Microstructure of Insect Cuticle and Biomimetic Research**  
Bin CHEN, Quan YUAN, Xianghe PENG, Jianguo WANG, Ji LUO
- S-S5.44(P) A02427-04306** pg S53  
**Investigation of Laminated and Screw Microstructures of Chamidae Shell and Biomimetic Design**  
Bin CHEN, Quan YUAN, Xianghe PENG, Jianguo WANG, Ji LUO
- S-S5.45(P) A02700-04644** pg S56  
**Photoelectrocatalysis Using Oxide Semiconductor Thin Films: An Efficient Way for Degradation of Organic Impurities in Water**  
P.S. SHINDE, P.S. PATIL, C.H. BHOSALE



- S-S5.46(P) A02710-04665** pg S57  
**Fine-crystalline Materials Technology Including Successive Processes in Hydrothermal and in Supercritical Conditions**  
Marina DANCHEVSKAYA, Yurii IVAKIN, Sergei TORBIN, Galina MURAVIEVA
- S-S5.47(P) A02717-04671** pg S57  
**Doping of Zinc Oxide under Soft Hydrothermal Conditions**  
Yurii IVAKIN, Marina DANCHEVSKAYA, Galina MURAVIEVA
- S-S5.48(P) A02727-04695** pg S58  
**Recovery of TiO<sub>2</sub> from Ti-humic Acid Sludge for DSSC Photoanodes**  
Yu-Hao CHANG, H. Paul WANG, Yu-Lin WEI, Chang-Yu LIAO, Chun-Kuo TSAI, Chih-Ju G. JOU
- S-S5.49(P) A02727-04706** pg S58  
**Sensing of ClCl<sub>4</sub> with Nanosize ZnO Thin Films**  
Huan-Hsuan HSU, H. Paul WANG, Yu-Lin WEI, Chun-Kuo TSAI
- S-S5.50(P) A02751-04722** pg S59  
**Fabrication of Polyaniline Spikes via Electropolymerization of Aniline for Ammonia Vapor Sensing Application**  
John Cerry LA ROSA
- S-S5.51(P) A02821-04838** pg S60  
**Electrospinning of Polycaprolactone and Polycaprolactone/Polyethylene Oxide Polymeric Solution for Nanofiber Fabrication**  
Juzzel Ian ZERRUDO, Emmanuel FLORIDO
- S-S5.52(P) A02827-04846** pg S61  
**Excellent Data Retention Ability of Mg<sub>x</sub>Sb<sub>100-x</sub> Material for Phase-Change Random Access Memory Applications**  
Chih-Chung CHANG, Ching-Yi HUNG, Kin-Fu KAO, Tri-Rung YEW, Tsung-Shune CHIN
- S-S5.53(P) A02851-04881** pg S62  
**Synthesis and Structural Studies on Complexes of Lanthanide(III) Nitrates with 4-[3-(2-Trifluoromethyl) Phenothiazine-10-yl] Propyl-1- Piperazine ethanol Dihydrochloride**  
Bellale Marigowda VENKATESHA, Rayapura Thimmegowda RADHIKA, Boregowda KESHAVAN
- S-S5.54(P) A02856-04885** pg S62  
**N-Bromosuccinimide Assisted Oxidation of Tripeptides and Their Amino Acid Analogs: Synthesis, Kinetics, and Product Studies**  
Doddamedur BHADRE GOWDA
- S-S5.55(P) A02869-04908** pg S63  
**Hydrothermal Synthesis, Characterisation and Application of Mn:ZnO Nanocrystals**  
C.P. SAJAN, Touba KHOSRAVI, S ANANDA, K BYRAPPA
- S-S5.56(P) A02872-04913** pg S63  
**Hydrothermal Immobilization of ZnO onto Calcium Alumina-Silicate Beads, Characterization and Photocatalytic Application**  
H.P. SHIVARAJU, C.P. SAJAN, Behzad SHAHMORADY, T RUNGNAPA, M.S. VIJAYAKUMAR, C RANGANATHAIAH, K BYRAPPA
- S-S5.57(P) A02873-04914** pg S64  
**Synthesis of AlPO<sub>4</sub> - Zeolites Particles: Application in Waste Water and Industrial Effluent Treatment**  
C.P. SAJAN, Viswanathan KRUPA, B.V. SURESH KUMAR, Basavaiah BASAVALINGU, K BYRAPPA
- S-S5.58(P) A02874-04916** pg S64  
**Hydrothermal Synthesis and Characterization of Ba<sub>4</sub>Nb<sub>2</sub>O<sub>9</sub> Crystals**  
Javarappa KOMAL KUMAR, Jana BEZJACK, K BYRAPPA, B BASAVALINGU
- S-S5.59(P) A02976-05088** pg S67  
**Studies on Molecular Transport of N-Alkanes Through Citric Acid and Maleic Acid Based Chain Extended Polyurethane**  
K. S. MANJULA, Siddaramaiah, K. BYRAPPA
- S-S5.60(P) A02977-05089** pg S68  
**Sliding Wear Behaviour of PP/UHMPE Blended Short Carbon Fiber Nanoclay Filled Composites**  
E. BASAVARAJ, Siddaramaiah, B. SHIVAMURTHY
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- S1-S6**  
 Wednesday, 1 July 2009  
 10:30-12:45  
 Level 3, Room 305
- 10:30 KN-03 A02059-03535** pg S43  
**Commercializing Hydrothermal Synthesis – Fluid Mixing and Reaction Kinetics**  
Ed LESTER
- 11:15 IN-12 A00557-01298** pg S19  
**Solvothermal Synthesis of Sulfides in Different Organic Solvents**  
Kazumichi YANAGISAWA, Nan LI, Haijun TAO, Wuxing ZHANG, Sumio KAMIYA, Tatsuo SHOU

11:45 IN-13 A02407-04183 pg S52  
Amino Acids- Precursor for Synthesizing Nonlinear  
Optical Materials  
Tanusree KAR

12:15 ORAL-29 A01718-02998 pg S36  
Thermodynamical Properties of Half Doped  
OrthoManganites  
R. K. SINGH

12:30 ORAL-30 A01719-02999 pg S37  
Transport Properties of Colossal Magneto-resistant  
Material  
Renu CHOITHRANI, N. K. GAUR

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### S2-S6

Wednesday, 1 July 2009  
11:15-12:45  
Level 3, Room 313

11:15 IN-16 A02394-04201 pg S50  
Fabrication of Titanate Thin Films, Nanotube  
Arrays, and Fibers through Electrochemical and  
Hydrothermal Reactions  
Koji KAJIYOSHI

11:45 IN-17 A02550-04360 pg S54  
Colloidal Cu(InGa)Se<sub>2</sub> Nanocrystals: A Precursor  
Route to Printed Photovoltaics  
Matthew PANTHANI, Brian GOODFELLOW,  
Vahid AKHAVAN, Bonil KOO, Brian KORGEL

12:15 IN-18 A03018-05148 pg S69  
Commercial Production of Nano-Particle of Metal  
Oxides by Continuous Hydrothermal Synthesis during  
Supercritical Water Oxidation  
Youn-Woo LEE

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### S1-S7

Wednesday, 1 July 2009  
14:00-15:30  
Level 3, Room 305

14:00 IN-14 A02196-05146 pg S47  
Understanding of Mechanism and Properties of  
Technological Materials  
R. K. SINGH

14:30 IN-15 A02692-04627 pg S56  
Biomediated, Biomimetic and Bio-inspired  
Approaches to Metal Oxide Nanostructures  
Mandeep KULAR, Elizabeth HORSTMAN,  
Doug DUCHON, Neha DHIMAN, Gabriela CUEVAS,  
James WEAVER, David KISAILUS

15:00 ORAL-31 A01889-03259 pg S40  
Synthesis and Properties of Lanthanum Silicate based  
Materials by a Molten NaOH/KOH System  
Ge HU, Tianshu ZHANG, Gregory K. L. GOH

15:15 ORAL-32 A01959-03390 pg S41  
Synthesis and Electron-Phonon Interactions of Ce<sup>3+</sup>-  
doped YAG Nanoparticles  
Liap Tat SU, Alfred I. Y. TOK, Zhao YANG,  
Nathaniel NG, Freddy Y. C. BOEY

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### S2-S7

Wednesday, 1 July 2009  
14:00-15:30  
Level 3, Room 313

14:00 IN-19 A02675-04593 pg S56  
Chemical Reaction Induced by Pulse Discharge  
Plasma in Sub- and Subcritical Fluids  
Motonobu GOTO, Mitsuru SASAKI, Masafumi  
MITSUGI, Akihiro YOSHIDA, Hiroshi WATANABE,  
Tsuyoshi KIYAN, Takao NAMIHIRA,  
Hidenori AKIYAMA

14:30 ORAL-43 A02735-04902 pg S59  
Chemical Bath Deposition for Metal Oxide Thin Films  
Haiyan XU, Hao WANG, Masahiro YOSHIMURA

14:45 ORAL-44 A02752-04864 pg S59  
Synthesis and Characterization of the Nanocrystalline  
Nickel Ferrites by a Mechano Sol-Gel Auto-  
Combustion Method  
M. SHAHMIRZAIE, S. A. SEYYED EBRAHIMI

15:00 ORAL-45 A02752-04866 pg S60  
Comparison of Self Propagating High Temperature  
and Mechano Sol-Gel Auto-Combustion Processes  
as Two Synthesis Routes for Nanocrystalline Mn-Zn  
Ferrite Powders  
H. AMIRI, S. A. SEYYED EBRAHIMI,  
M. YOUSEFZADEH

15:15 ORAL-46 A02760-04727 pg S60  
Uniformly-Sized Bismuth Sulfide Nanorods through  
Solvothermal Process  
Amita PATHAK

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### S1-S8

Wednesday, 1 July 2009  
15:30-18:00  
Level 3, Room 305

15:30 ORAL-33 A01966-03417 pg S41  
Halides, Counter Ions and Temperature Induced  
Tailoring of *Piper Betle* Extract Biosynthesized Gold  
Nanoparticles  
Sneha KRISHNAMURTHY,  
Sathishkumar MUTHUSWAMY, Yeoung-Sang YUN

15:45 ORAL-34 A01985-03425 pg S42

**Fabrication of BaTiO<sub>3</sub> Layers by Novel Solution Process Using High-frequency Induction Heating**  
Satoshi TATEMICH, Naota SUGIYAMA,  
 Shizuma KUDO, Takaaki TANIGUCHI,  
 Masahiro YOSHIMURA, Nobuhiro MATSUSHITA

16:00 ORAL-35 A02121-03675 pg S46

**Near Infrared-Emitting Rare Earth Doped CeF<sub>3</sub> Nanoparticles**  
Mei Chee TAN, G. A. KUMAR, Richard RIMAN

16:15 ORAL-36 A02232-03811 pg S47

**Unique Structure of ZnO Films Deposited by Chemical Bath Deposition**  
Dewei CHU, Yoshitake MASUDA, Kazumi KATO

16:30 ORAL-37 A02278-03966 pg S48

**Effects of Polyethylenimine on Morphology and Property of ZnO Films Grown in Aqueous Solutions**  
Xiulan HU, Yoshitake MASUDA, Tatsuki OHJI,  
 Kazumi KATO

16:45 ORAL-38 A02305-03938 pg S49

**Fabrication and Characterization of Ink-jet Printed Thick Film Containing AlN Powders**  
Hyo Tae KIM, Jongwoo LIM, Young Joon YOON,  
 Jihoon KIM, Jong-hee KIM, Ho Gyu YOON

17:00 ORAL-39 A02326-03985 pg S50

**A Facile, "Green" Synthetic Route to High Quality, Monodispersed Water Soluble Cadmium Selenide Nanoparticles**  
Oluwatobi Samuel OLUWAFEMI, Opeoluwa,  
 Oyehan OYEDEJI, Neerish REVAPRASADU,  
 Reinhardt BOTHA

17:15 ORAL-40 A02362-04038 pg S50

**Chemical and Nanoparticle Solution Spray Deposition of CuInS<sub>2</sub> Thin Films**  
Jeong Dae SUH, Ki Bong SONG, Kyung Hoon YOON,  
 Jae Ho YOON, Se Jin AHN, Joon Ho KIM

17:30 ORAL-41 A02572-04396 pg S55

**Synthesis and Characterization of Nanorods, Nanoneedles and Flower-like PbTe Nanocrystals by a Low Temperature Aqueous Chemical Route**  
Kungumadevi LAKSHMANAN,  
 Sathyamoorthy RAMAKRISHNAN

17:45 ORAL-42 A02578-04403 pg S55

**Hydrothermal Synthesis, Characterization and Application of *in-situ* Modified Mn:TiO<sub>2</sub> Nanoparticles for Treatment of Textile Effluents**  
Behzad SHAHMORADI, Guru Raw T.N., K. BYRAPPA

S2-S8

Wednesday, 1 July 2009

15:30-18:00

Level 3, Room 313

15:30 ORAL-47 A02864-04899 pg S62

**Hydrothermal Conversions of Polycarbonate and Polyethylene Naphthalate into Monomers in the Presence of Ammonia**  
Toshitaka FUNAZUKURI, Kohei HATAKEYAMA,  
 Risa ARAI

15:45 ORAL-48 A02913-04981 pg S66

**The Degradation of Pesticide in Waste Water Using Hydrothermally Prepared TiO<sub>2</sub>**  
 S. SRIKANTASWAMY, S. A. MUNIRAJU,  
 R. MADHUKAR, Puttaswamy

16:00 IN-20 A01862-03218 pg S40

**Three Routes to Nanostructured Metal Oxide Films for Alternative Energy Applications**  
 Eunyoung YOU, Nicholas HENDRICKS,  
 Christos KARANIKAS, Yu-Ying TANG, David HESS,  
 Adam O'NEIL, Kenneth CARTER, James WATKINS

16:30 IN-21 A02270-03877 pg S47

**Growth of Metal Oxides Nanostructures in Solution and Their Applications for High Sensitive Cholesterol and Glucose Biosensors**  
Yoon-Bong HAHN

17:00 ORAL-49 A02914-04982 pg S66

**Photocatalytic Degradation of Phenol Using Hydrothermally Prepared ZnO Impregnated Onto the Activated Carbon**  
 S. SRIKANTASWAMY, Puttaswamy, S. A. MUNIRAJU,  
Madhukumar

17:15 ORAL-50 A02974-05084 pg S66

**Electrical Properties of Nanographite Filled Immiscible Polymer Hybrid Composites**  
Shailesh B. S., Siddaramaiah,  
 R. D. SUDHAKAR SAMUEL

17:30 ORAL-51 A02975-05086 pg S67

**Feasibility of Xanthan Gum - Sodium Alginate as a Transdermal Drug Delivery System for Domperidone**  
N. RAJESH, Siddaramaiah

17:45 ORAL-52 A02975-05087 pg S67

**Investigation on Electrical Properties of Behaviour of High Density Polyethylene/Ultra High Molecular Weight Polyethylene/Carbon Black Composites**  
 B. S. SHAILESH, Siddaramaiah,  
 R. D. SUDHAKER SAMUEL, G. M. SHASHIDHARA,  
 Raji GEORGE

**S1-S10**

Thursday, 2 July 2009  
14:30-16:00  
Level 3, Room 311

14:30 IN-22 A02065-03550 pg S45

**Application of Synchrotron X-ray Topography to the Development of Solution-based Bulk Crystal Growth of Technologically Important Materials**

Michael DUDLEY, Balaji RAGHOTHAMACHAR, Yu ZHANG, Francesc DIAZ, Magdalena AGUILO, Joan CARVAJAL, Govindhan DHANARAJ

15:00 IN-23 A02300-03927 pg S48

**Functional ZnO Films and Single Crystals**

Dirk EHRENTAUT

15:30 IN-24 A03016-05145 pg S68

**Modeling on Ammonothermal Growth of GaN Semiconductor Crystals**

Qi-Sheng CHEN, Jun-Yi YAN, Yan-Ni JIANG, Wei LI

**S1-S11**

Thursday, 2 July 2009  
16:00-19:00  
Level 3, Room 311

16:00 IN-25 A02849-04878 pg S61

**Green Routes for the Synthesis of Nanomaterials**

Zhimin LIU

16:30 IN-26 A02034-03584 pg S43

**Positron Annihilation Spectroscopy As a Novel Tool to Study Polymer Based Composites and Nanocomposites**

Chikkakuntappa RANGANATHAIAH

17:00 IN-27 A02912-04980 pg S65

**Thermo-chemical Modelling of Non-Equilibrium Solution Processing**

S. RANGANATHAN

17:30 IN-28 A00641-01153 pg S22

**High Performance Visible Light Responsive Photocatalysts for Environmental Clean-up via Solution Processing**

Tsugio SATO, Peilin ZHANG, Shu YIN

18:00 IN-29 A02458-04196 pg S53

**Polyacrlamide/Laponite Clay Nanocomposite Hydrogels - Super Absorbent, Dye Adsorption and pH Sensitive Behaviors**

Siddaramaiah

18:30 IN-30 A00479-00980 pg S17

**Controllable Synthesis of Ferric Oxide Nanostructural Materials via Hydrothermal Method**

Dan WANG, Ranbo YU, Zhenmin LI, Dan MAO, Jun LI

**S1-S12**

Friday, 3 July 2009  
11:00-12:15  
Level 3, Room 305

11:00 IN-31 A02907-04969 pg S64

**Insight through In Situ Studies of Hydrothermal Processing of Heterogeneous Catalyst**

Gopinathan SANKAR

11:30 IN-32 A00516-02909 pg S19

**Self-assembly of Metal Oxides -Liquid Phase Patterning and Morphology Control-**

Yoshitake MASUDA

12:00 ORAL-53 A03019-05159 pg S70

**Gold NP's and CNT's Anchored WO<sub>3</sub> Thin Films Synthesized by Pulsed Spray Pyrolysis Technique for Enhanced Electro-Optic Properties**

P. M. KADAM, N. L. TARWAL, P. S. SHINDE, H. P. DESHMUKH, R. S. PATIL, P. S. PATIL