



## Curriculum Vitae (Toyoko IMAE)

**NAME:** Toyoko IMAE, Dr. Sci.

**BIRTH DATE:** November 20, 1942

**NATIONALITY:** Japan

**AFFILIATION:**

Chair Professor of Graduate Institute of Applied Science and Technology  
Jing-Cheng Honors College

Joint Professor of Department of Chemical Engineering  
National Taiwan University of Science and Technology

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**PROFESSOR EMERITUS:** Nagoya University, Japan

**PRESENT COMMISSION MEMBER:**

2009~2013/1/5 Executive Member of Council for Science and Technology Policy (CSTP), Japan

2011/10-present Member of Science Council (CMSC) of Japan

2006~present Field advisor of Japan Science and Technology Agency (JST)

2009~present Member of World Federation of Engineering organizations (WFEO) Women in Engineering (WIE) committee

2010~present Member of National University Corporation Evaluation committee by Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

**AWARDS:**

1999 Promising Scientist Award of The Society of Japanese Women Scientists

2001 Award of The Japan Oil Chemists' Society

2005 Silver Prize of JAS (Journal of Advanced Science) 2005 of Society of Advanced Science

2006 Award of The Achievement for The Polymer Society of Japan

2009 Award of Ministry of Environment for local environmental protection service

2011 The 54<sup>th</sup> excellence paper award at the division of technology on oils and fats  
from Japan Oil Chemists' Society

2012 An Academic Award from Helical Science Society, Japan

**EDUCATION:**

1965 Bachelor's degree at Nara Women's University, Faculty of Science

**ACADEMIC DEGREE:**

1973 Doctorate of Science at Nagoya University, Faculty of Science

**PROFESSIONAL CAREER:**

2012-2013 Guest Lecturer Kazakh national Technical University  
2010-present Joint Professor Department of Chemical Engineering, National Taiwan University of Science and Technology  
2009-present Chair Professor Graduate Institute of Engineering, Jing-Cheng Honors College, National Taiwan University of Science and Technology  
2008-2009 Professor Keio Advanced Research Centers, Keio University  
2006-2009 Visiting Chair Professor National Taiwan University of Science and Technology, Taiwan  
2006-2009 Vice-supervisor Chulalongkorn University, Thailand  
2006-2008 Professor Faculty of Science and Technology, Keio University  
2006-present Professor emeritus  
1999-2006 Professor Research Center for Materials Science, Nagoya University  
1991 Visiting Researcher University of Bayreuth, Germany (Prof. H. Hoffmann)  
1990-1999 Associate Professor Department of Chemistry, Faculty of Science, Nagoya University  
1975-1990 Research Assistant Department of Chemistry, Faculty of Science, Nagoya University  
1973-1975 Postdoctoral Researcher Brandeis University, USA (Prof. G. F. Fasman)  
1969-1975 Technical Assistant Department of Chemistry, Faculty of Science, Nagoya University  
1965-1969 Technical Assistant Institute of Protein Research, Osaka University

**INTERNATIONAL RESEARCH RECORDS:**

1989 Cooperative Researcher of Japan-USA Scientific Collaboration Project in Japan Society for the Promotion of Science (JSPS) (Minnesota University, USA, Prof. D. F. Evans)  
1990 Acceptant of Southeast Asian National Academic Exchange Program in JSPS (Prof. Leong-Ming Gan and Dr. Chwee-Har Chew, National Singapore University, Singapore)  
1995 Acceptant of Strategic Field Foreigner Inviting Project (Dr. Marie-Pierre Krafft, University of Nice, France)  
1998 Leader of Japan-Australia Science and Technology Collaboration Project in International Division, Ministry of Education (University of Sydney, Dr. Mark Rutland)  
2000-2003 Cooperative Researcher of Japan-USA Scientific Collaboration Project in Japan Society for the Promotion of Science (JSPS) (University of Miami, USA, Prof. D. F. Lebranc)  
2003-2006 Member of Japan-India Natural Science Collaboration Project in Ministry of Education, Culture, Sports, Science and Technology.  
2006-2009 Member of Keio University-Shiseido Co. Ltd. Cooperative Research Project  
2009-2010 Co-PI of CSIC/NSC Cooperative Research Project (Prof. Conxita Solans, IQAC, CSIC)  
2010-2012 PI of CSIC/NSC Cooperative Research Project (Prof. Conxita Solans, IQAC, CSIC)  
2010-2012 PI of DST/NSC Cooperative Research Project (Prof. C. N. Murthy, M.S. University of Baroda)

**ADJUNCT PROFESSOR:**

1995 Nara Women's University, Graduate School of Science  
1995 Fukuoka University, Graduate School of Science  
1998 Kyoto University, Graduate School of Pharmacy  
1999 Toyoma Medical and Pharmaceutical University, Graduate School of Pharmacy  
2001 College of the Air  
2003 Hiroshima University, Faculty of Science  
2003 Nara Women's University, Faculty of Science  
2005 Meisei University, Global Environment Science Center  
2007 Gannan Normal University, Republic of China

National Taiwan University  
National Cheng Kung University  
2012 Kazakh National Technical University  
2013 Chang Gung University

**COMMISSION (International):**

1993-2010 Editorial Advisory Board: Langmuir, American Chemical Society  
2003-present Editorial Advisers: Journal of Surface Science and Technology, India  
2007~2010 Member of International Experts Council (IEC) of the Republic of Kazakhstan  
2009~present Member of World Federation of Engineering Organizations (WFEO) Women in Engineering (WIE) committee  
2009-present Editorial Board: Journal of Nanoscience and Nanotechnology, American Scientific Publishers  
2010~2012/3 Member of Japan committee, International Year of Chemistry 2011  
2010-present International Editorial Board of the Journal of the Chinese Institute of Engineers (JCIE)  
Tayer & Francis

**COMMISSION (Government):**

1997-1999 Member of a Subject Expert Committee in National Center for University Entrance Examination  
2002-2003 Expert Member of a Grant-in-Aid for Scientific Research Commission in Japan Society for the Promotion of Science (JSPS)  
2002-2004 Member of a University-appraisal Board in National Institution for Academic Degrees  
2003-2005 Expert Member of a Board of Review in Japan Society for the Promotion of Science (JSPS)  
2005-2006 Member of a Expert Committee (Scientific Sectional Committee) in Scientific and Technical Science Council  
2005~2011 Council Member of Science Council (CMSC) of Japan  
2006~present Field advisor of Japan Science and Technology Agency (JST)  
2009~present Executive Member of Council for Science and Technology Policy (CSTP), Japan  
2009~2011/3 Provisional Commission of University Division, Central Education Council, in Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan  
2010~present External valuation member of strategic research core constitution support project for Private university by Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan  
2011/10-present Member of Science Council (CMSC) of Japan  
2010~2012 External valuation member of strategic research core constitution support project for Private University by Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

**COMMISSION (Local Administration):**

1998-2006 Environmental Council of Aichi Prefecture  
1998-2008 Environmental Council of Nagoya City  
1999-2011 Environmental Impact Statement reviewing committee of Aichi Prefecture  
2000-2002 Large-Scale Retail Stores Location Council of Aichi Prefecture  
2000-2006 Environmental Destruction Reviewing Committee of Aichi Prefecture  
2000-2009 Environmental Destruction Reviewing Committee of Mie Prefecture  
2002-2010 Environmental Destruction beforehand Reviewing Committee of Mie Prefecture  
2002-2011 Environmental Impact Statement committee of Mie Prefecture

**ORGANIZATION COMMITTEE OF INTERNATIONAL CONFERENCE:**

1996, Oct 10-13 'The International Symposium on Colloids and Polymer Science',  
Member of Organizing Committee  
1998, Oct 4-10 'OCUIS 98 4th International Conference on hydrocolloids' in Osaka, Japan,  
Member of Organizing Committee  
2000, Sept 21-22 'The Nagoya COE-RCMS Conference on Materials Science and Nanotechnology' in Nagoya,  
Japan, Chairperson of Organizing Committee  
2000, Oct 22-27 'JOCS/AOCS World Congress 2000' in Kyoto, Member of Organizing Committee  
2000, Nov 5-8 International Conference on Colloid and Surface Science- 25<sup>th</sup> Anniversary of Division of

- Colloid and Surface Chemistry' in Tokyo, Member of Organizing Committee
- 2002, June 9-14 '14<sup>th</sup> Surfactants in Solution Symposium' in Barcelona, Spain,  
Member of the International Advisory Committee
- 2004, Jan 13-14 '21<sup>st</sup> Century COE- RCMS International Conference' in Nagoya, Japan,  
Member of Organizing Committee
- 2005, Dec 7-9 'Asian Conference on Recent Trends in Colloid and Surface Science' in Nagoya, Japan,  
Chairman of Organizing Committee
- 2006, June 4-9 '16<sup>th</sup> Surfactants in Solution Symposium' in Soal, Korea,  
Member of the International Advisory Committee
- 2007, July 17-19 'Japan-Taiwan Joint Sympojium' in Hakone, Japan  
Chairperson of Organizing Committee
- 2007, Sept 1-4 'The First Asian Symposium on Advanced Materials – Chemistry & Physics of Functional  
Materials – (ASAM-1)' in Vladivostok, Russia, International Advisory Committee
- 2007, Oct 28-30 'The 2nd Asian Conference on Colloid & Interface Science', Shandon, China,  
International Advisory Committee
- 2008, Aug 8-10 'Taiwan-Japan Joint Sympojium' in Taroko, Taiwan, Co-Chairperson of Organizing Committee
- 2009, Oct 11-14 'The 2nd Asian Symposium on Advanced Materials – Chemistry & Physics of Functional  
Materials – (ASAM-2)' in Shanghai, China, International Advisory Committee
- 2009, Oct 11-14 'The 3<sup>rd</sup> Asian Conference on Colloid & Interface Science' in Jeju, Korea,  
International Advisory Committee
- 2010, Nov 26 'International Workshop on "Novel Nanotechnology and Nanomaterials for "Science  
for Human" (2010)' in Taipei, Taiwan, Chairperson of organizing committee
- 2011, Sept 19-22 'The 3rd Asian Symposium on Advanced Materials – Chemistry & Physics of Functional  
Materials – (ASAM-3)' in Vladivostok, Russia, International Advisory Committee
- 2011, Oct 21-23 'International Conference on Advanced Materials and Nanotechnology' in Kathmandu, Nepal,  
International Advisory board
- 2011, Nov 23-26 'The 4th Asian Conference on Colloid & Interface Science' in Tainan, Taiwan,  
International Advisory Committee
- 2011, Dec 16-17 'Polymer Science and Nanotechnology : Design and Structure (PSNDS-11)' in Baroda,  
India, Advisory Committee

#### **BOARD OF EXAMINER ( the Degree of Doctor of Philosophy, Faculty Position)**

Australia (1999, 2011), India (2001, 2003, 2003, 2005, 2010), Pakistan (2010, 2012), Taiwan (2010, 2011), Kuwait (2011),

#### **GRANT JUDGE**

2005, 2006 The National Science Foundation (NSF) (U.S.A.)

2007 Swiss National Science Foundation

2007 The Research Grants Council (RGC) of Hong Kong

2008 Foundation of Iceland

2011 the review of research proposals of scientific community of Kazakhstan,  
National Center of Science and Technology Evaluation, Astana, Kazakhstan

#### **RESEARCH TARGET:**

The main field is the science of nanomaterials and nanotechnology, especially, the fabrication of hybrids and composites. Such subjects were studied by using various techniques like adsorption, self-assembly, accumulation, lithography as well as synthesis and by means of various instruments of spectroscopy, microscopy, rheology, and thermodynamics, so on. The investigation was focused on various materials such as amphiphiles, block copolymers, dendrimers, nanoparticles, metal oxide particles, fullerenes, carbon nanotubes, carbon microcoils, etc. Such advanced materials can be incorporated as components of the hybrid and composite systems. Such components are built up into device, sensor and systems for energy, environmental and bio sciences. The investigations for past 5 years can be summarized in the following titles.

1. Syntheses of dendritic polymers and their functionalities

2. Hierarchy structures of dendritic polymers with functional components
3. Anomalous luminescence property of dendritic polymers
4. Fabrication of metal particles with unique shapes
5. Preparation of porous materials with dendrimer porogens

#### **PUBLICATIONS:**

274 original papers (see separate sheet)  
 2 edited monograph (see separate sheet)  
 23 book chapter (see separate sheet)  
 22 reviews  
 9 patent

#### **PRESENT INTERNATIONAL COLLABORATION PROJECT:**

- 1) Fabrication of Advanced Hybrid Nanomaterials toward Drug Delivery Systems, Institut de Química Avançada de Catalunya (IQAC), CSIC, Spain (CSIC/NSC "FORMOSA PROGRAM" Cooperative Research Project)
- 2) Fabrication of Carbon Nanotube Hybrids toward Nanotechnology, University of Baroda, India (DST/NSC Cooperative Research Project)
- 3) Development of high-sensitive biosensors consisting of noble metal nanoparticle-immobilized fibrous carbon electrodes, Okayama University of Science
- 4) Development of high-sensitive gas sensing systems, Shimane University
- 5) Synthesis of dendritic polymers, Hyogo University

#### **COLLABORATED COMPANY:**

(Japan) Mitsubishi Chemical, NOF Corporation, Menicon, Shiseido  
 (Taiwan) Foxlink

#### **Publications (2008-2012)**

##### **[book]**

1) Neutrons in Soft Matter, Eds. Toyoko Imae, Toshiji Kanaya, Michihiro Furusaka, and Naoya Torikai, John Wiley & Sons, Inc., Hoboken, New Jersey, 2011.

##### **[book chapter]**

22) Physicochemical Properties of Dendrimers and Dendrimer-drug Complexes in "Dendrimer-based Drug Delivery Systems: from Theory to Practice" Toyoko Imae, Ed. by YiYun Cheng, John Wiley Sons., Inc., Chapter 3, 55-92 (2012)  
 21) Fabrication of dendrimers towards biological application in "Nanoparticles in Translational Science and Medicine" in "Progress in Molecular Biology and Translational Science" book series, Hsieh-Chih Tsai and Toyoko Imae, Ed. Antoni Villaverde, Academic Press (Elsevier) Part I, Chapter 3, 101-140 (2011)  
 20) Structure of Dendritic Polymers and Their Films in "Neutrons in Soft Matter", Koji Mitamura and Toyoko Imae, Eds. Toyoko Imae, Toshiji Kanaya, Michihiro Furusaka, and Naoya Torikai, Wiley, 435-454 (2011)  
 19) Mesophase Morphologies of Silicone Block Copolymers in a Selective Solvent Studied by SAXS, Dietrich Leisner, Md. Hemayet Uddin, M. Arturo López-Quintela, Toyoko Imae and Hironobu Kunieda, Self-Organized Surfactant Structures, edited by Tharwat F. Tadros, Wiley, 161-174 (2010)

##### **[journal]**

279) Advantages of loading of dendrimer-protected platinum nanoparticles and carbon nanotubes on electrochemical methanol oxidation, Ampornphan Siriviriyannun and Toyoko Imae, Phys. Chem. Chem. Phys., 2013, in press,  
 278) Functionalization of Carbon Microcoils by Platinum-loading through Dendrimer Binder, A. Siriviriyannun, T. Imae, and S. Motojima, Science of Advanced Materials, in press.  
 277) Surface Immobilization of Carbon Nanotubes by  $\beta$ -cyclodextrins and Their Inclusion Ability, Vinod I. Bhoi, Toyoko Imae, Masaki Ujihara and C. N. Murthy, J. Nanosci. Nanotech., in press

- 276) Fabrication and Characterization of Dendrimer-Functionalized Mesoporous Hydroxyapatite, Nabakumar Pramanik, and Toyoko Imae, *Langmuir*, 28, 14018–14027 (2012).
- 274) Advantages of Immobilization of Pt Nanoparticles Protected by Dendrimers on Multiwalled Carbon Nanotubes, Ampornphan Siriviriyanun and Toyoko Imae, *Phys. Chem. Chem. Phys.*, 14, 10622-10630 (2012).
- 273) Syntheses and Characterizations of Multi-walled Carbon Nanotubes-Supported Palladium Nanocomposites, Walid Mohamed Rashad Daoush and Toyoko Imae, *Journal of Materials Research*, 27, 1680-1687 (2012).
- 272) Solution-based nano-plasmonic sensing technique by using gold nanorods, Fu Han Ho, Yung-Han Wu, Masaki Ujihara and Toyoko Imae, *Analyst*, 137, 2545-2548 (2012).
- 271) Fabrication of carbon microcoil/polyaniline composite by microemulsion polymerization for electrochemical functional enhancement, Indrajit Shown, Toyoko Imae, Seiji Motojima, *Chemical Engineering Journal*, 187, 380-384 (2012). (Cover-page illustration)
- 270) Network of sodium hyaluronate with nano-knots junction of poly(amido amine) dendrimer, Toyoko Imae and Shin-ichi Hamaguchi, *Carbohydrate Polymers*, 88, 352-360 (2012).
- 269) Thermal Degradation Analysis of the isocyanate polyhedral oligomeric silsesquioxanes (POSS)/sulfone epoxy nanocomposite, Yie-Chan Chiu, Hsieh-Chih Tsai, and Toyoko Imae, *Journal of Applied Polymer Science*, 124, 1234-1240 (2012).
- 268) Two Photon Confocal Imaging Study: Cell Uptake of Two photon Dye-labeled PAMAM Dendron with HeLa Cells, H.-C. Tsai, T. Imae, G. Calderó, C. Solans, *J. Biomed. Mater. Res. A.*, 100A, 746-756 (2012).
- 267) Intrinsically Fluorescent PAMAM Dendrimer as Gene Carrier and Nanoprobe for Nucleic Acids Delivery: Bioimaging and Transfection Study, Ya-Ju Tsai, Chao-Chin Hu, Chih-Chien Chu, and Toyoko Imae, *Biomacromolecules*, 12, 4283-4290 (2011).
- 266) Selective immobilization of carbon micro coils on patterned substrates and their electrochemical behavior on ITO substrate, Prashanta Dhoj Adhikari, Toyoko Imae, and Seiji Motojima, *Chemical Engineering Journal*, 174, 693-698 (2011).
- 265) Self-association behavior in water of an amphiphilic diblock copolymer comprised of anionic and dendritic blocks, Shin-ichi Yusa, Yoshihiko Shimada, Toyoko Imae, and Yotaro Morishima, *Polymer Chemistry*, 2, 1815-1821 (2011).
- 264) A combination of hard and soft templating for the fabrication of silica hollow microcoils with nanostructured walls, Carlos Rodriguez-Abreu, Neus Vilanova, Conxita Solans, Masaki Ujihara, Toyoko Imae, Arturo Lopez-Quintela and Seiji Motojima, *Nanoscale Research Letters*, 6, 330 (2011).
- 262) Synthesis and Characterization of “Hairy Urchin”-like Polyaniline by Using  $\beta$ -Cyclodextrin as a Template, Adhimoorthy Prasanna, Tram Le Bich Truong, Po-Da-Hong, Narayanasastri Somanathan, Indrajit Shown and Toyoko Imae, *Langmuir*, 27, 766-773 (2011).
- 261) Visual observation of avidin-biotin affinity by fluorescent G4.5 poly(amidoamine) dendrimer, Govindachetty Saravanan, Kenji Daigo, Toyoko Imae, and Takao Hamakubo, *Colloids and Surfaces B: Biointerfaces*, 83, 58–60 (2011).
- 260) Visual observation and characterization of fluorescent poly(amido amine) dendrimer in film state, Govindachetty Saravanan and Toyoko Imae, *J. Nanosci. Nanotech.*, 11, 4838-4845 (2011).
- 259) Synthesis of  $\beta$ -cyclodextrin-modified water-dispersible Ag-TiO<sub>2</sub> core-shell nanoparticles and their photocatalytic activity, *J. Nanosci. Nanotech.*, Indrajit Shown, Masaki Ujihara and Toyoko Imae, 11, 3284-3290 (2011).
- 258) Sensitizing of Pyrene Fluorescence by  $\beta$ -cyclodextrin-modified TiO<sub>2</sub> Nanoparticles, Indrajit Shown; Masaki Ujihara; and Toyoko Imae, *Journal of Colloid & Interface Science*, 352, 232-237 (2010).
- 257) Reinforcement on Properties of Poly(vinyl alcohol) Films by Embedding Functionalized Carbon Micro Coils, Prashanta Dhoj Adhikari, Masaki Ujihara, Toyoko Imae, Po-Da Hong and Seiji Motojima *J. Nanosci. Nanotech.* 11, 1004-1012 (2010).
- 256) Surface functionalization of carbon micro coils and their selective immobilization on surface-modified silicon substrates, Prashanta Dhoj Adhikari, Yian Tai, Masaki Ujihara, Chih-Chien Chu, Toyoko Imae, and Seiji Motojima, *J. Nanosci. Nanotech.*, 10, 833-839 (2010).
- 255) Damage/Recovery by Additive on Lipid Membrane as a Mimicry of Human Stratum Corneum, Yan Zhu, Toyoko Imae, Takuya Saiwaki and Takashi Oka, *Langmuir*, 26, 4951–4957 (2010).
- 254) Visual observation of selective elution of components from skin-mimetic lipid membrane, Xiaojuan Wang, Masaki Ujihara, Toyoko Imae, Takuya Saiwaki, Akira Ishikubo, and Tooru Okamoto, *Colloids and Surfaces B: Biointerfaces*, 81, 174-177 (2010).
- 253) Characterization of mimetic lipid mixtures of stratum corneum, Xiaojuan Wang, Masaki Ujihara, Toyoko

- Imae, Akira Ishikubo, Yuki Sugiyama, and Tooru Okamoto' *Colloids and Surfaces B: Biointerfaces*, 78, 92-100 (2010).
- 252) Bio-modulation Approach for Gold Nanoparticles: Synthesis of Anisotropic to Luminescent Particles, Jadab Sharma, Yian Tai, and Toyoko Imae, *Chemistry - an Asian Jurnal*, 5, 70-73 (2010).
- 251) Immobilization of amphiphilic dendron on silica particles toward the application to ultrahigh pressure liquid chromatography, Chih-Chien Chu, Norio Ueno, and Toyoko Imae, *J. Nanosci. Nanotec.*, 10, 5324-5327 (2010).
- 250) Hierarchical Structures of Dendritic Polymers, Masaki Ujihara and Toyoko Imae, *Polym. Int.*, 59, 137-144 (2010). (Review article)
- 248) Synthesis of Mo-SBA-1 catalyst via sol-gel process and its activity, Sujitra Wongkasemjit; Suparb Tamuang; Walairat Tanglumlert; Toyoko Imae, *Materials Chemistry and Physics*, 2009, 117, 301-306.
- 247) pH Dependent Encapsulation of Pyrene in PPI-core:PAMAM-shell Dendrimers, Dinakaran Kannaiyan and Toyoko Imae, *Langmuir*, 2009, 25, 5282-5285
- 246) Perpendicular Superlattice Growth of Hydrophobic Gold Nanorods on Patterned Silicon Substrates via Evaporation-induced Self-assembling, Xiaoming Zhang and Toyoko Imae, *J. Phys. Chem. C*, 2009, 113, 5947-5951
- 245) Synthesis of Poly(amido amine) Dendrimer with Redox-Active Spacers, Chih-Chien Chu and Toyoko Imae, *Macromolecules*, 2009, 42, 2295-2299
- 244) Functionalization of Gold Nanorods toward Their Applications, Koji Mitamura and Toyoko Imae, *Plasmonics*, 2009, 4, 23-30 (review)
- 243) Fluorescence investigations of oxygen-doped simple amine; in comparison with fluorescent PAMAM dendrimer, Chih-Chien Chu and Toyoko Imae, *Macromol. Rapid Commun.*, 2009, 16, 89-93
- 242) Surface Modification of Gold Nanorods by Organosilanes, Koji Mitamura, Toyoko Imae, Nagahiro Saito, and Osamu Takai, *Composite Interfaces*, 2009, 16, 377-385
- 241) Fabrication of dendrimer porogen-encapsulated mesoporous silica via sol-gel process of silatrane precursor, Walairat Tanglumlert, Sujitra Wongkasemjit, and Toyoko Imae, *J. Nanosci. Nanotech.*, 2009, 9, 1844-1850
- 240) Recent Advances in Fabrication of Anisotropic Metallic Nanostructures, Jadab Sharma and Toyoko Imae, *J. Nanosci. Nanotechnol.* 2009, 9, 19-40 (Review)
- 239) Synthesis of Confeito-Like Gold Nanostructures by a Solution Phase Galvanic Reaction, Jadab Sharma, Yian Tai, and Toyoko Imae, *J. Phys. Chem. C*, 2008, 112, 17033-17037
- 238) Preparation of highly ordered Fe-SBA-1 and Ti-SBA-1 cubic mesoporous silica via sol-gel processing of silatrane, Walairat Tanglumlert, Toyoko Imae, Timothy John White, Sujitra Wongkasemjit, *Materials Letters*, 2008, 62, 4545-4548
- 237) Investigation of luminescent poly(propylene imine) dendrimer, Kana Tamano and Toyoko Imae, *J. Nanosci. Nanotech.* 2008, 8, 4329-4334
- 236) Synthesis and Characterization of Poly(ethyleneimine) Dendrimers, Omprakash Yemul and Toyoko Imae, *Colloid and Polymer Science*, 2008, 286, 747-752
- 235) Surface Plasmon Fluorescence Investigation of Energy Transfer-controllable Organic Thin Films, Langmuir, Koji Mitamura, Toyoko Imae, Senjun Tian and Wolfgang Knoll, *Langmuir*, 2008, 24, 2266-2270
- 234) Solid-phase Synthesis of Amphiphilic Dendron-Surface Modified Silica Particles and Their Application Toward Water Purification, Chih-Chien Chu, Norio Ueno and Toyoko Imae, *Chem. Mater.*, 2008, 20, 2669-2676
- 233) Transport properties of field-effect transistor with Langmuir-Blodgett films of C60 dendrimer and estimation of impurity levels, Naoko Kawasaki, Takayuki Nagano, Yoshihiro Kubozono, Yuuki Sako, Yuu Morimoto, Yutaka Takaguchi, Akihiko Fujiwara, Chih-Chien Chu, and Toyoko Imae *Applied Physics Letters*, 2007, 91, 243515-1-243515-3
- 232) Fabrication and Structure of Alginate Gel Incorporating Gold Nanorods, Koji Mitamura; Toyoko Imae; Nagahiro Saito; Osamu Takai, *J. Phys. Chem. C*, 2008, 112, 416-422

[patent]

- 1) Beauty regimen for repairing Rough surface (Japan) No. 2010-189300, 2010.9.2, Takashi Oka, Takuya Saiwaki, Toyoko Imae, Yen Zhu
- 2) Preparation of intercellular lipid-mimetic substrate of skin corneum and valuation method of rough surface by using it (Japan) No. 4670089, 2011/01/28, Takuya Saiwaki, Takashi Oka, Yu-ichiro Mori, Toyoko Imae, Xiaojuan Wang, Masaki Ujihara
- 3) Preparation of intercellular lipid-mimetic substrate of skin corneum and valuation method of rough surface by using it (EU) No. EP2372360, 2011/10/05, Takuya Saiwaki, Takashi Oka, Yu-ichiro Mori, Toyoko Imae, Xiaojuan Wang, Masaki Ujihara

- 4) Preparation of intercellular lipid-mimetic substrate of skin corneum and valuation method of rough surface by using it (China) No. CN102265153A, 2011/11/30, Takuya Saiwaki, Takashi Oka, Yu-ichiro Mori, Toyoko Imae, Xiaojuan Wang, Masaki Ujihara