Curriculum Vitae

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Name	**Tohru Sekino**	Nationality	Japan
Affiliation & Position	Department of Advanced Hard Materials, The Institute of Scientific and Industrial Research (ISIR), Osaka University Professor Director Assistant		
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Education	B.S.: Department of Applied Chemistry, Faculty of Engineering, Tohoku University (March 1988) M.S.: Department of Materials Chemistry, Faculty of Engineering, Tohoku University (March 1990) Academic Degree Dr. of Engineering, Osaka University (May 1997)		
Professional Experience	Experiences 1990.4 ~ 1999.3: Research Associate of ISIR, Osaka University 1999.4 ~ 2007.10: Associate Professor of ISIR, Osaka University 2007.11~2014.3: Associate Professor, IMRAM, Tohoku University 2008.4 ~ 2013.9: Part-time Lecturer, Sendai National College of Technology 2013.4 ~ 2013.9: Lecturer (Part-time), Nagasaki University 2014.4 ~ : Professor, ISIR, Osaka University 2016.4 ~ : Director Assistant, ISIR, Osaka University 2016.10~ : Guest Professor, Wuhan University of Technology, China. 2017.10~ : Guest Professor, University of Science and Technology Beijing, China.		
Specially	Ceramic Science, Nanostructured Materials Science, Composite Materials Science and Technology		
Honors and Awards	Scientific Paper Award, The High Temperature Society, Japan (May, 1996). Excellent Patent Award, Agency of Science and Technology (April 1996). Scientific Encouragement Award, The Japan Society of Powd. and Powd. Metall., (May, 1997). Scientific Encouragement Award, The Japan Society of Powd. and Powd. Metall., (May, 2004). Excellent Academic-Photo Award, The 30th Ceramographic Contest, The Ceram. Soc. Japan (March, 2005). Poster Award, The 2nd International Joint Conference of Asia-Oceania Ceramic Society Federation (October 2006, Osaka, Japan). Excellent Poster Award, The 8th International Symposium on Eco-materials Processing and Design (January 2007, Fukuoka, Japan). Poster Award 2nd Prize, The 7th PacRim Conference, Nanostructured & Multifunctional Materials Symposium (Nov. 2007, Shanghai, China). Good Presentation Award, The 48th Symposium on Basic Science of Ceramics, Ceramic Society of Japan (Jan. 2010, Okinawa, Japan). The Best Poster Award, at the International Congress of Ceramics (ICC3); Symposium 5 (Nov. 2010, Osaka, Japan). Excellent Presentation Award, Ceramics Society of Japan the 25th Fall Meeting (Sept. 2012, Nagoya, Japan). Ceramographic Competition Award: 1st Place of Optical Microscope Category, The American Ceramic Society		

	(Materials Science & Technology 2013 Conference, October 27-31, 2013, Montreal, Quebec, Canada). Best Poster Award, IUMRS-ICAM2015 (Fabrication of Nanostructured Polyaniline and Polyaniline/TiO_2 Nanohybrids and their Electrical Properties), (Oct. 2015, Jeju, Korea). Paper Award, Japan Society for Adhesive Dentistry (Shear bond strength of veneering porcelain to porous zirconia), (December 2015). The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT, Japan), Prizes for Science and Technology (Technology Category), (April 2016). The 70th CerSJ Awards for Academic Achievements, The Ceramic Society of Japan (May 2016).
Membership	The Ceramic Society of Japan, The American Ceramic Society, The Japan Society of Powder and Powder Metallurgy, Chemical Society of Japan, The Japan Institute of Metals, Materials Research Society, Materials Research Society of Japan, etc.
Research Interest	Design & development of ceramic-based nanocomposites. Multifunctionalization of ceramics by 3D nanonetwork control in bulk structures. Development, analysis & multifunctionalization of novel semiconductor oxide nanotubes for energy and environmental applications. Nanostructured ceramics and composites for biomedical application. Human-friendly nanocomposite sensor materials by organic-inorganic nano-hybridization. Development and nano-structuralization of oxide ceramic semiconductors for energy creation.
Recent Publications (3 years)	1. "Photocatalytic activity under UV/Visible light range of Nb-doped titanate nanostructures synthesized with Nb oxide", Jong Min Byun, Hye Rim Choi, Young Do Kim, Tohru Sekino, Se Hoon Kim, *Applied Surface Science*, **415**, 126-131(2017). 2. "Effect of ultraviolet treatment on bacterial attachment and osteogenic activity to alkali-treated titanium with nanonetwork structures", H. Zhang, S. Komasa, C. Mashimo, T. Sekino, J. Okazaki, *International Journal of Nanomedicine*, **12**, 4633-4646(2017). 3. "Relationship between the CO sensing performance of micro-thermoelectric gas sensors and characteristics of PtPd/Co_3O_4 and PtPd/SnO_2 catalysts", T. Goto, T. Itoh, T. Akamatsu, T. Sekino, W. Shin, *Sensors and Actuators, B: Chemical*, Volume **243**, 847-855(2017). 4. "Impact of grain shape on the micromechanics-based extraction of single-crystalline elastic constants from polycrystalline samples with crystallographic texture", M. Tane, K. Yamori, T. Sekino, T. Mayama, *Acta Materialia*, Vol.**122**, 236-251(2017). 5. "RGO/Ag_2S/TiO_2 ternary heterojunctions with highly enhanced UV-NIR photocatalytic activity and stability", T. Liu, B. Liu, L. Yang, X. Ma, H. Li, S. Yin,T. Sato, T. Sekino, Y. Wang, Applied Catalysis B: Environmental, Volume **204**, 593-601(2017). 6. "Fabrication of a TiO_2-P25/(TiO_2-P25+TiO_2 nanotubes) junction for dye sensitized solar cells", N. H. Hao, G. Gyawali, T. Sekino, S. W. Lee, *Progress in Natural Science-Materials International*, **26**, 375-379(2016). 7. "Induction of Oxidative Stress in HeLa Cells with Reactive Oxygen Species generated in Titanium Oxide Nano-tubes", Hisataka NISHIDA, Tomonari TANAKA, Yoshitomo HONDA, Tomoyo GOTO, Sunghun CHO, and Tohru SEKINO, *Nano Biomedicine*, **8**(1), 41-50 (2016). 8. "Translucency and low-temperature degradation of silica-doped zirconia: A pilot study", Takashi Nakamura, Yoshiro Nakano, Hirofumi Usami, Kazumichi Wakabayashi, Hiroshi Ohnishi, Tohru Sekino, and Hirofumi Yatani, *Dental Materials Journal*, **35**(4), 571–577(2016). 9. "Thermal conductivity of hot-pressed hexagonal boron nitride", T. Kusunose, and T. Sekino, *Scripta Materialia*, **124**, 138–141(2016). 10. "Improvement in fracture strength in electrically conductive AlN ceramics with high thermal conductivity", Takafumi Kusunose, and Tohru Sekino, *Ceramics International*,

	42, 13183-13189 (2016). 11. "Effect of microwave-assisted hydrothermal process parameters onformation of different TiO_2 nanostructures", S. H. Cho, H. H. Nguyen, G. Gyawali, J. E. Son, T. Sekino, B. Joshi, S. H. Kim, Y. H. Jo, T. H. Kim, S. W. Lee, *Catalysis Today*, **266**, 46–52 (2016). 12. "Smart window coating based on F-TiO_2-K_xWO_3 nanocomposites with heat shielding, ultraviolet isolating, hydrophilic and photocatalytic performance", Tongyao Liu, Bin Liu, Jing Wang, Linfen Yang, Xinlong Ma, Hao Li, Yihong Zhang, Shu Yin, Tsugio Sato, Tohru Sekino and Yuhua Wang, Scientific Reports, Volume **6**, Article number 27373 (2016). 13. "Synthesis of TiO_2-Modified Hydroxyapatite with Various Morphology by Urea-Assisted Hydrothermal Method", T. Goto, T. Sekino, *Materials Science Forum*, Vol. **868**, 28-32(2016). 14. "Tribological Behaviors of Dense Gelcasting Nanocomposites", S. H. Cho, S. H. Jeong, B. S. Kim, T. Sekino, S. W. Lee, S. H. Kim, *Materials Science Forum*, Vol. **868**, 56-60 (2016). 15. "Crystallization and microstructure formation of glass with $Y_2Si_2O_7$-mullite eutectic composition", Shunkichi Ueno, Tomoe Tada, Yohei Suzuki, Junko Nozawa, Byung-Koog Jang, Tohru Sekino, *Ceramics International*, **42** (12), 13601–13604 (2016). 16. "Anatase Type Titanium Dioxide Prepared by Oxidation of Titanium Carbide", Jun-ichi Matsushita, Tomoyuki Tsuchiyama, Kazuya Hamaguchi, Naoya Iwamoto, Xiaoling Wang, Jianfeng Yang, Tohru Sekino, Xiaoyong Wu, Shu Yin, and Tsugio Sato, Materials Science Forum Vol. **860**, 92-96(2016). 17. "Nanostructured Ti6Al4V alloy fabricated using modified alkali-heat treatment: Characterization and cell adhesion", Y. Su, S. Komasa, T. Sekino, H. Nishizaki, and J. Okazaki, *Materials Science and Engineering C*, Volume **59**, 617-623(2016). 18. "Characterization and Bone Differentiation of Nanoporous Structure Fabricated on Ti6Al4V Alloy", Yingmin Su, Satoshi Komasa, Tohru Sekino, Hiroshi Nishizaki, and Joji Okazaki, *Journal of Nanomaterials*, **2015** (2015), Article ID 358951. 19. "Synthesis of $TiO_{2-x}N_y$/Ag-$PbMoO_4$ composite and their photocatalytic activity under simulated solar light irradiation", T.-H. Kim, S.-W. Lee, G. Gyawali, Y.-H. Jo, T. Sekino, *Int. J. Appl. Ceram. Tech.*, **12**, 577–584(2015). 20. "Localization Effect on Pt-Loaded $Ce_{0.5}Zr_{0.5}O_2$ Nanoparticles Inserted Into Mesoporous SBA-16 by Hydrothermal Processing", Hiroaki Yotou, Takumi Okamoto, Miho Ito, Tohru Sekino, Shun-Ichiro Tanaka, *J. Nanosci. Nanotechnol.*, vol.**15**, no.9, 7117-7120(2015). 21. "Fitting accuracy and fracture resistance of crowns using a hybrid zirconia frame made of both porous and dense zirconia", T. Nakamura, T. Sugano, H. Usami, K. Wakabayashi, H. Ohnishi, T. Sekino, and H. Yatani, *Dental Materials Journal*, vol. **34**, no. 2, 257-262 (2015). 22. "Effects of stacking sequence and short-range ordering of solute atoms on elastic properties of Mg-Zn-Y alloys with long-period stacking ordered structures", M. Tane, H. Kimizuka, K. Hagihara, S. Suzuki, T. Mayama, T. Sekino, Y. Nagai, *Acta Mater.*, vol. **96**, 170-188(2015). 23. "Effect of Porphyromonas gingivalis lipopolysaccharide on bone marrow mesenchymal stem cell osteogenesis on a titanium nanosurface", H. Xing, Y. Taguchi, S. Komasa, I. Yamawaki, T. Sekino, M. Umeda, and J. Okazaki, *J. Periodontol.*, vol. **86**, Issue 3, 448-455(2015). *24.* "Er^{3+} loaded barium molybdate nanoparticles: IR to visible spectral upconversion", R. Adhikari, B. Joshi, R. Narro-García, E. De La Rosa, T. Sekino, S.W. Lee, *Materials Letters*, **142**, 7-10(2015).