

## Curriculum Vitae

### Personal:

Name: Katsuyuki Fukutani  
Sex: Male  
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Place of Birth: Tokyo  
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Citizenship: Japanese

### Education:

1985 B. Sc., Physics Department, The University of Tokyo  
1990 D. Sc., Physics Department, The University of Tokyo  
(A Study of Homoepitaxial Growth on the Clean and Metal-covered Surfaces  
of Ge and Si)  
Supervisor: Prof. S. Ino

### Profession:

1990 - 1995 Research Associate (Prof. Y. Murata)  
Institute for Solid State Physics, The University of Tokyo  
1994 - 1996 PRESTO Researcher, Japan Science Technology Corporation  
1995 - 1996 Lecturer  
Institute of Industrial Science, The University of Tokyo  
1996 - 2006 Associate Professor  
Institute of Industrial Science, The University of Tokyo  
2000 - 2000 Visiting scientist  
Fritz-Haber-Institut der Max-Planck-Gesellschaft, Germany  
2000 - 2001 Visiting scientist  
Department of Chemistry, Cambridge University, UK  
2005 - 2011 Chief researcher  
CREST, Japan Science and Technology Agency  
2006 - present Professor  
Institute of Industrial Science, The University of Tokyo  
2010 - 2011 Department Head, Institute of Industrial Science, The University of Tokyo  
2018 - 2021 Deputy Director, Institute of Industrial Science, The University of Tokyo  
2018 - present Japan Atomic energy Agency, Advanced Science Research Center  
Surface and Interface Science Group, Group Leader

Academic service:

1996 - 2005	Editorial board, Journal of Vacuum Society of Japan
2005 - 2007	Chief editor, Journal of Vacuum Society of Japan
2007 - 2012	Advisory member, PRESTO project Japan Science and Technology Agency
2007 - 2017	Board member, Vacuum Society of Japan
2008 - 2014	Editorial board, Journal of Physics: Condensed Matter
2009 - 2021	Editorial board, Journal of Physical Society of Japan
2009 - 2012	Board member, Surface Science Society of Japan
2016 - 2019	Chair of Congress Planning Committee, International Union for Vacuum Science, Technique and Applications
2018 - 2021	Vice president, Japan Society of Vacuum and Surface Science
2019 - 2021	Scientific Secretary International Union for Vacuum Science, Technique and Applications (IUVSTA)
2022 - 2024	President, Japan Society of Vacuum and Surface Science
2022 - present	Scientific Director International Union for Vacuum Science, Technique and Applications (IUVSTA)

## Publication list

### A. Peer reviewed

1. S. Hirata, G. Lim, T. Ozawa, M. Wilde, K. Fukutani, M. Ochi, H. Kitagawa, M. Maesato:  
Efficient electron doping into  $\text{KTaO}_3$  by hydrogen ion beam, *Phys. Rev. Mater.* submitted.
2. T. Kawauchi et al.:  
A  $\mu\text{SR}$  Study of Excess Charge in Crystalline and Amorphous Ice, submitted.
3. G.C. Lim, M. Irfandi, R. Nakayama, D.-W. Lim, T. Ozawa, K. Kato, M. Wilde, K. Fukutani, H. Kitagawa, M. Maesato:  
Ultra-high concentration hydrogen doping into  $\text{TiO}_2$ , *J. Am. Chem. Soc.* 146, 32013-32021 (2024).
4. T. Ozawa, Y. Sugisawa, Y. Komatsu, R. Shimizu, T. Hitosugi, D. Sekiba, K. Yamauchi, I. Hamada, K. Fukutani:  
Isotope-dependent site occupation of hydrogen in epitaxial titanium hydride nanofilms, *Nat. Commun.* 15, 9558 (2024).
5. V. A. Kiliyankil, W. Mao, Y. Takahashi, W. Gong, S. Kabayama, Y. Hamasaki, K. Fukutani, H. Matsuzaki, I. Sakata, K. Takeuchi, M. Endo and B. Fugetsu:  
Edge sites on platinum electrocatalysts are responsible for discharge in the hydrogen evolution reaction, *J. Mater. Chem. A* 12, 28731-28743 (2024)
6. S. Suzuki, D. Katsube, M. Yano, Y. Tsuda, T. Terasawa, T. Ozawa, K. Fukutani, Y. Kim, H. Asaoka, J. Yuhara, A. Yoshigoe:  
Germanene reformation from oxidized germanene on  $\text{Ag}(111)/\text{Ge}(111)$  by vacuum annealing, *Small* method 2400863, 2024.
7. K. Kato, N. Nagatsuka, K. Fukutan:  
 $\text{H}_2$  molecule generation from dissociatively adsorbed water on  $\text{TiO}_2$  through photoexcitation, *J. Phys. Chem. C* 128, 8188 (2024).
8. T. Zhang, M. Hu, M. Z. A. Mia, H. Zhang, W. Mao, K. Fukutani, H. Matsuzaki, L. Wen, C. Wang, H. Zhao, X. Chen, Y. Yuan, F. Meng, K. Yang, L. Zhang, J. Wang, A. Li, W. Zhao, S. Lei, J. Chen, P. Yu, A. Sengupta, H.-T. Zhang:  
Self-sensitizable neuromorphic device based on adaptive hydrogen gradient, *Matter* 7, 1799-1816 (2024).
9. Y. Guan, F. Komori, M. Horio, A. Fukuda, Y. Tsujikawa, K. Ozawa, M. Kamiko, D. Nishio-Hamane, T. Kawauchi, K. Fukutani, Y. Tokumoto, K. Edagawa, R. Tamura and I. Matsuda:  
Pioneering preparation and analysis of a clean surface on a microcrystal, mined by focused ion beam, *Jpn. J. Appl. Phys.* 63, 030906 (2024).

10. X. Zhou, Z. Gu, Z. Jiang, T. Ozawa, W. Mao, K. Fukutani, H. Matsuzaki, Y. Jiang, N. Chen, J. Chen:  
Revealing the role of high-valence elementary substitution in the hydrogen-induced Mottronic transitions of vanadium dioxide, *Appl. Phys. Lett.* 124, 082103 (2024).
11. H. Koshida, M. Wilde, K. Fukutani:  
Coverage-dependent desorption kinetics of ice on a well-ordered alumina thin film surface, *J. Chem. Phys.* 160, 034703 (2024).
12. T. Ozawa, K. Wang, K. Nishio, R. Shimizu, T. Hitosugi, K. Fukutani:  
Hydrogen absorption in an epitaxial thin film of high-entropy perovskite oxide, *J. Vac. Sci. Technol. A* 42, 023402 (2024). (selected as Editor's pick)
13. M. Matsumi, K. Gotoh, M. Wilde, Y. Kurokawa, K. Fukutani, N. Usami:  
Hydrogenation of silicon-nanocrystals-embedded silicon oxide passivating contacts, *Nanotechnology* 35, 105602 (2024).
14. T. Ozawa, H. Nakanishi, K. Kato, R. Shimizu, T. Hitosugi, K. Fukutani:  
Observation of resonant tunneling of proton from octahedral to tetrahedral sites in Pd, *J. Phys. Chem. Solids* 185, 111741 (2024).
15. W. Mao, W. Gong, Z. Gub, M. Wilde, J. Chen, K. Fukutani, H. Matsuzaki, B. Fugetsu, I. Sakata, T. Terai:  
Hydrogen diffusion in cerium oxide thin films fabricated by pulsed laser deposition, *Int. J. Hydrogen Energy* 50, 969 (2024).
16. K. Asakawa, N. Tanabe, T. Kawauchi, K. Fukutani, A. Hatakeyama:  
Optical and spin-selective time-of-flight measurement of light-induced desorption of Rb from  $\text{Fe}_3\text{O}_4$  surfaces, *Sci. Rep.* 13, 14965 (2023).
17. M. Matsumi, K. Gotoh, M. Wilde, Y. Kurokawa, K. Fukutani, N. Usami:  
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18. I. Matsuzawa, T. Ozawa, Y. Nishiya, U. Sidik, A. Hattori, H. Tanaka, K. Fukutani:  
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19. C. Liu, H. Ariga-Miwa, T. Ozawa, S. Ogura, K. Fukutani, M. Gao, J. Hasegawa, K.-i. Shimizu, K. Asakura, S. Takakusagi:  
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20. H. Ueta, K. Fukutani:  
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21. M. Yano, S. Yasuda, K. Fukutani, H. Asaoka:  
Long and Oriented Graphene Nanoribbon Synthesis from Well-Ordered 10,10'-Dibromo-9,9'-Bianthracene Monolayer on Crystalline Au Surfaces, *RSC Adv.* 13, 14089 (2023).
22. S. Kobayashi, K. Nishio, M. Wilde, K. Fukutani, R. Shimizu, T. Hitosugi:  
Protons Inside the LiCoO<sub>2</sub> Electrode Largely Increase Electrolyte – Electrode Interface Resistance in All-Solid-State Li Batteries, *J. Phys. Chem. C* 127, 4684-4688 (2023).
23. S. Chon, Y. Sugisawa, S. Kobayashi, K. Nishio, M. Wilde, N. Kishi, D. Sekiba, K. Fukutani, T. Hitosugi, R. Shimizu:  
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28. T. Kawamura, Y. Fukaya, K. Fukutani:  
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29. Y. Komatsu, R. Shimizu, R. Sato, M. Wilde, K. Nishio, T. Katase, D. Matsumura, H. Saitoh, M. Miyauchi, J. R. Adelman, R. M. L. McFadden, D. Fujimoto, J. O. Tickenor, Monika Stachura, Iain McKenzie, Gerald D. Morris, W. Andrew MacFarlane, J. Sugiyama, K. Fukutani, S. Tsuneyuki, and T. Hitosugi:  
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30. R. Tsubata, K. Gotoh, M. Matsumi, M. Wilde, T. Inoue, Y. Kurokawa, K. Fukutani, N. Usami:  
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31. N. Nagatsuka, K. Kato, M. Wilde, K. Fukutani:  
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32. Y. Nagaya, H. Nakatsu, S. Ogura, K. Shimazaki, H. Ueta, K. Takeyasu, K. Fukutani:  
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33. M. Suehara, Y. Yamamoto, S. Ogura, K. Fukutani:  
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34. K. Gotoh, M. Wilde, S. Ogura, Y. Kurokawa, K. Fukutani, N. Usami:  
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35. Y. Yamashita, G. Lim, T. Maruyama, A. Chikamatsu, T. Hasegawa, H. Ogino, T. Ozawa, M. Wilde, K. Fukutani, T. Terashima, M. Ochi, K. Kuroki, H. Kitagawa, M. Maesato:  
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37. T. Kawauchi, Y. Miura, K. Asakawa, K. Fukutani:  
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40. Y. Komatsu, R. Shimizu, M. Wilde, S. Kobayashi, Y. Sasahara, K. Nishio, K. Shigematsu, A. Ohtomo, K. Fukutani, T. Hitosugi:  
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41. R. Shimizu, Y. Sasahara, I. Hamada, H. Oguchi, S. Ogura, T. Shirasawa, M. Kitamura, K. Horiba, H. Kumigashira, S. Orimo, K. Fukutani, T. Hitosugi:  
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43. Y. Nakagawa, K. Gotoh, S. Ogura, M. Wilde, Y. Kurokawa, K. Fukutani, N. Usami:  
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44. N. Nagatsuka, M. Wilde, K. Fukutani:  
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45. W. Mao, M. Wilde, T. Chikada, K. Fukutani, H. Matsuzaki, T. Terai:  
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46. S. Miyagawa, K. Gotoh, S. Ogura, M. Wilde, Y. Kurokawa, K. Fukutani, N. Usami:  
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47. K. Gotoh, M. Wilde, S. Kato, S. Ogura, Y. Kurokawa, K. Fukutani, N. Usami:  
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48. M. Matsumoto, T. Okada, T. Miyazawa, K. Mase, M. Yamanaka, A. Hashimoto, M. Wilde, K. Fukutani:  
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49. T. Kawamura, K. Fukutani:  
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50. T. Ozawa, R. Shimizu, S. Ogura, T. Hitosugi, K. Fukutani:  
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51. W. Mao, L. Zhang, M. Wilde, S. Ogura, T. Chikada, K. Fukutani, H. Matsuzaki, T. Terai:  
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52. Y. Ohashi, N. Nagatsuka, S. Ogura, K. Fukutani:  
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53. K. Asakawa, Y. Miura, N. Nagatsuka, K. Takeyasu, M. Matsumoto, K. Fukutani:  
Electronic and spin states modulation on Fe<sub>3</sub>O<sub>4</sub>(111) surfaces, *Phys. Rev. B* 99, 085442 (2019).
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56. S. Ogura, S. Ohno, K. Mukai, J. Yoshinobu, K. Fukutani:  
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60. S. Ohno, D. Ivanov, S. Ogura, M. Wilde, E. Arguelles, W. A. Diño, H. Kasai, K. Fukutani:  
Rotational State Modification and Fast Ortho-Para Conversion of H<sub>2</sub> Trapped within a Highly Anisotropic Potential of Pd(210), *Phys. Rev. B* 97, 085436 (2018).
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  66. K. Shimizu, W. A. Dino, H. Nakanishi, H. Kasai, K. Fukutani, A. Yajima:  
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