

# Curriculum Vitae

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## Education

Ph. D in Applied Physics, Hokkaido University, 1997  
M. Eng in Applied Physics, Hokkaido University, 1994  
B. Eng in Applied Physics, Hokkaido University, 1992

## Appointments

Hokkaido University, Department of Applied Physics, assistant professor, 2007-present  
University of California, Santa Barbara, visiting researcher, 2003-2004.  
Helsinki University of Technology, visiting senior researcher, 2001  
Hokkaido University, Department of Applied Physics, instructor, 1997-2007  
Komatsu Co Ltd, Research Center, researcher, 1997  
Japan Society for the Promotion of Science, Research Fellowship 1994-1997

## Publications

1. "Topological effects of charge density waves in ring-shaped crystals of NbSe<sub>3</sub>," Toru Matsuura, Taku Tsuneta, Katsuhiko Inagaki, and Satoshi Tanda, Physical Review B, 73 (16) p. 165118 (2006).
2. "Soliton transport in nanoscale charge-density-wave systems," Katsuhiko Inagaki, Takeshi Toshima, Satoshi Tanda, Proceedings of 1st International Conference on Topology in Ordered Phase, pp. 165-170 (2006).

3. “Law of growth in topological crystal,” M. Tsubota, S. Tanda, K. Inagaki, T. Toshima, and T. Matsuura, Proceedings of 1st International Conference on Topology in Ordered Phase, pp. 71-75 (2006).
4. “Synthesis and electric properties of NbS<sub>3</sub>: Possibility of room temperature charge density wave devices,” H. Nobukane, M. Nishida, K. Inagaki, and S. Tanda, Proceedings of 1st International Conference on Topology in Ordered Phase, pp. 76–81 (2006).
5. “One to two dimension conversion in topological crystals,” T. Toshima, K. Inagaki, and S. Tanda, Proceedings of 1st International Conference on Topology in Ordered Phase, 114–118 (2006).
6. “Optical vortex generation for characterization of topological materials,” Y. Tokizane, R. Morita, K. Oka, A. Taniguchi, K. Inagaki, and S. Tanda, Proceedings of 1st International Conference on Topology in Ordered Phase, pp. 318–322 (2006).
7. “Experimental study of two and three-dimensional superconducting networks,” S. Tsuchiya, T. Kikuchi, H. Takahashi, K. Inagaki, S. Tanda, Proceedings of 1st International Conference on Topology in Ordered Phase, pp. 367–372 (2006).
8. “Topological effects of charge density waves in ring-shaped crystals of NbSe<sub>3</sub>,” Toru Matsuura, Taku Tsuneta, Katsuhiko Inagaki, and Satoshi Tanda, Phys. Rev. **B 73**, 165118 (2006).
9. “Supercluster of Electrons in Ultrathin TaSe<sub>2</sub> Nanocrystals,” Takeshi Toshima, Katsuhiko Inagaki, Noriyuki Hatakenaka, and Satoshi Tanda, J. Phys. Soc. Jpn. **75**, 024706 (2006).
10. “Soliton transport in nanoscale o-TaS<sub>3</sub> crystals,” K. Inagaki, T. Toshima, and S. Tanda, J. Phys. IV France **131**, pp. 75–76 (2005).
11. “Dimensional crossover on soliton transport in TaS<sub>3</sub> nanocrystals,” Katsuhiko Inagaki, Takeshi Toshima, Satoshi Tanda, J. Phys. Chem. Solid **66**, pp. 1563–1566 (2005).
12. “Fabrication of electrodes on charge-density-wave nanoscale crystals,” Katsuhiko Inagaki, Takeshi Toshima, Satoshi Tanda, and Kazuhiko Yamaya, Physica C **426–431**, pp. 1736–1740 (2005).
13. “Fabrication of nanoscale charge density wave systems,” Katsuhiko Inagaki, Takeshi Toshima, Satoshi Tanda, Kazuhiko Yamaya, and Shinya Uji, Appl. Phys. Lett. **86**, 073101 (2005).
14. “Dynamics of Charge Density Wave Ring,” T. Matsuura, T. Tsuneta, K. Inagaki, S. Tanda, Physica C **426–431**, pp. 431-435 (2005).
15. “Finite-size effects on transverse magnetoresistance of NbSe<sub>3</sub>,” Yamaguchi Takahide, Shinya Uji, Kengo Enomoto, Takako Konoike, Taichi Terashima, Mituska Nishimura, Taku Tsuneta, Katsuhiko Inagaki, Satoshi Tanda, and Kazuhiko Yamaya, Phys. Rev. **B 71**, 134409 (2005).

16. “Gold Nanoparticle Decoration of DNA on Silicon,” Gary Braun, Katsuhiko Inagaki, R. August Estabrook, D. K. Wood, Eran Levy, A. N. Cleland, Geoffrey F. Strouse, and Norbert O. Reich, *Langmuir* **21**, pp. 10699–10701 (2005).
17. “Anomalous doping effect on Ag-doped DNA conductor,” H. Mayama, T. Hiroya, K. Inagaki, S. Tanda, and K. Yoshikawa, *Chem. Phys. Lett.* **397**, pp. 101-105 (2004).
18. “Formation of Metallic NbSe<sub>2</sub> Nanotubes and Nanofibers,” T. Tsuneta, T. Toshima, K. Inagaki, T. Shibayama, S. Tanda, S. Uji, M. Ahlskog, P. Hakonen, and M. Paalanen, *Current Applied Physics* **3**, pp. 473–476 (2003).
19. “Low-temperature specific heat in the charge-density-wave state of ZrTe<sub>3</sub> and NbTe<sub>4</sub>,” Shujiro Mori, Yoshitoshi Okajima, Katsuhiko Inagaki, Satoshi Tanda and Kazuhiko Yamaya, *Physica B* **329–333**, pp. 1298–1299 (2003).
20. “New Crystal topologies and the charge-density-wave in NbSe<sub>3</sub>,” Taku Tsuneta, Satoshi Tanda, Katsuhiko Inagaki, Yoshitoshi Okajima, Kazuhiko Yamaya, *Physica B* **329–333**, pp. 1544–1545 (2003).
21. “Structural and electrical properties of TaSe<sub>3</sub> ring crystals,” Toru Matsuura, Satoshi Tanda, Kenji Asada, Yohei Sakai, Taku Tsuneta, Katsuhiko Inagaki and Kazuhiko Yamaya, *Physica B* **329–333**, pp.1550–1551 (2003).
22. “Conductive Oxide Cantilever for Cryogenic Nano-potentiometry,” T. Hiroya, K. Inagaki, S. Tanda, T. Tsuneta, and K. Yamaya, *Physica B* **329-333**, pp.1635–1636 (2003).
23. “Hall coefficients and resistivities of Bi<sub>2+x</sub>Sr<sub>2-x</sub>CuO<sub>y</sub> single crystals: the presence of a mobility edge in correlated two-dimensional electron system,” K. Inagaki and S. Tanda, *Journal of Applied Physics* **92**, pp. 5214–5217 (2002).
24. “A Mobius strip of single crystals,” Satoshi Tanda, Taku Tsuneta, Yoshitoshi Okajima, Katsuhiko Inagaki, Kazuhiko Yamaya, and Noriyuki Hatakenaka, *Nature* **417**, 397–398 (2002).
25. “Cantilever Dynamics in Ultrasonic Force Microscopy,” Osamu Matsuda, Takuya Terada, Katsuhiko Inagaki, and Oliver B. Wright, *Jpn. J. Appl. Phys.*, **41**, 3545 – 3546 (2002).
26. “Hysteresis in cantilever motion of ultrasonic force microscopy,” K. Inagaki, O. Matsuda, and O. B. Wright, *Appl. Phys. Lett.* **80**, 2386 – 2388 (2002).
27. “The Formation by the Spooling Mechanism of N $\pi$ -twisted Loop Crystals of NbSe<sub>3</sub>: A New CDW Conductor,” T. Tsuneta, S. Tanda, K. Inagaki, K. Yamaya and N. Hatakenaka, *TOWARD THE CONTROLLABLE QUANTUM STATES* (2002, World Scientific Publishing), edited by Hideaki Takayanagi and Junsaku Nitta, pp.497-501.
28. “Sub-surface mapping of thermal properties with optical heterodyne force microscopy,” M. Tomoda, N. Shiraishi, K. Inagaki, O. V. Kolosov and O. B. Wright, *Proc. 12th International Conference on Photoacoustic and Photothermal Phenomena*, Toronto, Canada, 2002, p. 25

29. "Local mapping of thermal properties with optical heterodyne force microscopy," N. Shiraishi, M. Tomoda, K. Inagaki, O. V. Kolosov and O. B. Wright, 9th International Colloquium on Scanning Probe Microscopy, Atagawa, Japan, 2001, p.43 (2001).
30. "Cantilever dynamics in ultrasonic force microscopy," O. Matsuda, T. Terada, K. Inagaki and O. B. Wright, Proc. 22th Symposium on Ultrasonic Electronics, 2001, Ebina, Japan, pp. 229-230 (2001).
31. "Waveguide ultrasonic force microscopy at 60 MHz," K. Inagaki, O. V. Kolosov, G. A. D. Briggs, and O. B. Wright, Appl. Phys. Lett., **76**, 1836 – 1838 (2000).
32. "Very high frequency ultrasonic force microscopy in waveguide mode," K. Inagaki, O. V. Kolosov, G. A. D. Briggs, N. Mason and O. B. Wright, Preliminary Proceedings of the 10th International Conference on Scanning Tunneling Microscopy/Spectroscopy and Related Proximal Probe Microscopy, Seoul, Korea, 1999, pp. 521-522
33. "Ultrasonic force microscopy in waveguide mode up to 100 MHz," K. Inagaki, O. V. Kolosov, G. A. D. Briggs, S. Muto, Y. Horisaki, and O. B. Wright, Proceedings of 1998 IEEE International Ultrasonics Symposium, Sendai, Japan, pp. 1255 – 1258.
34. "Optical heterodyne force microscopy," N. Kumano, K. Inagaki, O. V. Kolosov, and O. B. Wright, Proceedings of 1998 IEEE International Ultrasonics Symposium, Sendai, Japan, pp. 1269 – 1272.
35. "Resonant ultrasound spectroscopy using optical excitation and detection," S. Sato, K. Inagaki, V. E. Gusev, and O. B. Wright, Proceedings of 10th international conference on photoacoustic and photothermal phenomena, Rome Italy, pp. 506 – 508 (1998).
36. "Superconductor-insulator transition in ultrathin Pb films: Localization and superconducting coherence," K. Kagawa, K. Inagaki, and S. Tanda, Phys. Rev. **B 53**, 2979 – 2982 (1996).
37. "Transport properties of  $\text{Bi}_2\text{Sr}_2\text{CuO}_6$  single crystals: Possibility of interplane coupling in the weakly localized regime," K. Inagaki and S. Tanda, Phys. Rev. **B 53**, 8902 – 8905 (1996).
38. "Hall coefficients in the superconductor-insulator transition of  $\text{Bi}_{2+x}\text{Sr}_{2-x}\text{CuO}_y$ : Measurement of Hall-bar shaped single crystals fabricated by excimer-laser cutting," K. Inagaki, S. Tanda, and K. Sajiki, Appl. Phys. Lett. **69**, 3075 – 3077 (1996).
39. "Transport properties of localized states in  $\text{Bi}_2\text{Sr}_2\text{CuO}_6$  single crystals," K. Inagaki, K. Yamaya, and S. Tanda, Physica **C 263**, 321 – 324 (1996).
40. "Nonlinear conductivity of  $\text{Bi}_2\text{Sr}_2\text{CuO}_6$  single crystals," K. Inagaki and S. Tanda, Physica **C 235-240**, 1361–1362 (1994).

## Oral Presentations

1. Katsuhiko Inagaki, Satoshi Tanda (2006), “Low temperature current-voltage characteristics of nanoscale TaS<sub>3</sub> crystals,” Workshop in recent developments in low dimensional charge density wave conductors, Skradin, Croatia.
2. Katsuhiko Inagaki, Takeshi Toshima, Satoshi Tanda (2005), “Soliton transport in nanoscale charge-density-wave systems,” Proceedings of 1st International Conference on Topology in Ordered Phase, Sapporo.
3. Inagaki K., Kolosov O.V., Briggs G.A.D., Muto S., Horisaki Y., and Wright O.B. (1998) Ultrasonic force microscopy in waveguide mode up to 100 MHz, 1998 IEEE International Ultrasonics Symposium, Sendai.

## Received Grants

1. ”Transport phenomena of inorganic nanotubes”, Grant-in-aid for Scientific Research, 2002-2003
2. ”Quantitative measurement of local elastic properties in semiconductor nanostructures”, Murata Science Foundation, 2000
3. ”Ultrasonic-Photonic Local Probe Microscopy”, Grant-in-aid for Scientific Research, 1999-2000
4. ”Measurement of Local elastic constants in semiconductor nanostructures using ultrasonic nonlinear force microscopy”, Shinsedai Kenkyusho, 1999
5. ”Imaging of picosecond dynamics in nanostructures”, Hattori Hokokai, 1998
6. ”Development of ultrasonic heterodyne detection with atomic force microscopy”, Ono foundation of Acoustics, 1997