

# CURRICULUM VITAE

Prof. Dr. YOICHI ANDO

## Present Position

Professor of Experimental Physics (W3), University of Cologne

## Work Address

Physics Institute II  
University of Cologne  
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## Birth Year: 1964

## Education and Degrees

Ph.D. (Physics): February 1994, University of Tokyo  
Master of Science (Physics): March 1989, University of Tokyo  
Bachelor of Science (Physics): March 1987, University of Tokyo

## Professional Career

2018– **Spokesperson**, Cluster of Excellence “Matter and Light for Quantum Computing” (ML4Q)  
2015– **Full Professor (W3)**, Physics Institute II, University of Cologne  
2007–2015 **Full Professor**, Institute of Scientific and Industrial Research, Osaka University  
1996–2007 **Senior Research Scientist**, Central Research Institute of Electric Power Industry  
(2004–2005 **Department Head**, Department of Materials Physics and Synthesis)  
(1997–2005 **Visiting Associate Professor**, Tokyo University of Science [adjunct])  
1994–1996 **Resident Visitor** (postdoc), Bell Laboratories  
1994–1994 **Research Scientist**, Central Research Institute of Electric Power Industry  
1991–1994 **Research Scientist**, Superconductivity Research Laboratory, ISTE  
1989–1991 **Associate Researcher**, Central Research Institute of Electric Power Industry

## Membership

American Physical Society (Fellow)

**Total Number of Citations in Web of Science** (as of October 2018): 15,709

**Hirsch’s  $h$  Index in Web of Science** (as of October 2018): 66 (at Google Scholar: 81)

## Research Summary

The strength of Dr. Ando’s research lies in the core strategy to perform both the state-of-the-art materials synthesis and difficult low-temperature experiments in a synergistic manner. Before 2007, he worked mainly on high- $T_c$  superconductors, where his main achievements were (i) Discovery of insulating normal state and hidden metal-to-insulator crossover under 60-T magnetic fields, and (ii) Discovery of electron nematicity manifested in the in-plane resistivity anisotropy. Since 2007, he has been a pioneer in the fields of topological insulators (TIs) and topological superconductors, where his major contributions include (i) Discovery and developments of bulk-insulating TI materials, (ii) Experimental discovery of the topological superconductivity in  $\text{Cu}_x\text{Bi}_2\text{Se}_3$ , and (iii) Experimental discovery of topological crystalline insulator. After moving to Cologne, he is expanding his research horizon into mesoscopic physics in topological materials, by employing nanofabrication techniques.

### Major Community Services

- Referee for Nature, Science, Reviews of Modern Physics, Physical Review Letters, Nature Physics, Nature Materials, PNAS, EPL, Physical Review B, Journal of the Physical Society of Japan, *etc.*
- Co-Editor, *EPL* (Europhysics Letters) (2010–2017)
- Program Committee, 28th International Conference on Low Temperature Physics (LT28, 2017)
- International Advisory Board, *Advanced Materials Interfaces* (Wiley) (2014–2016)
- International Advisory Committee, Materials and Mechanisms of Superconductivity Conference (M<sup>2</sup>S 2012, M<sup>2</sup>S 2015, M<sup>2</sup>S 2018).
- Committee member of the US National Research Council (NRC) Study on High Magnetic Field Research in the United States (2012-2013)
- John Bardeen Prize Selection Committee (2009)
- Program Committee, 8th International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors (M<sup>2</sup>S-HTSC-VIII, 2006)

### Honors and Awards

- 2018 Fellow of the American Physical Society
- 2017 Clarivate Analytics **Highly Cited Researchers 2017**
- 2017 **ERC Advanced Grant** “Majorana Fermions in Topological Insulator Platforms”
- 2016– Osaka University Global Alumni Fellow
- 2014 Thomson Reuters **Highly Cited Researchers 2014**
- 2014 **Osaka Science Prize**<sup>§</sup> (Osaka City & Osaka Prefecture)  
for *Pioneering Research of Topological Insulators and Superconductors*
- 2014 **Inoue Prize for Science**\* (Inoue Foundation for Science)  
for *Pioneering Research of Topological Insulators and Superconductors*
- 2013 The 17th Superconductivity Science and Technology Award (The Society of Non-Traditional Technology, Japan) for *Theory and Demonstration of Topological Superconductors*
- 2012 & 2014 Osaka University Presidential Award for Achievement in Research (Osaka University)
- 2006 **JSPS Prize**<sup>†</sup> (Japan Society for the Promotion of Science) for *Research on Competing Electronic Phases and Hidden Order in High-Temperature Superconductors*
- 2003 The 7th Superconductivity Science and Technology Award (The Society of Non-Traditional Technology, Japan) for *Research on Electronic Structures and Transport Phenomena in High-Temperature Superconductors*

<sup>§</sup>Osaka Science Prize is awarded each year to two scientists aged 50 or under, selected from all fields of natural science for their outstanding contributions accomplished in the Osaka area. The prize money is 1.5 million JPY.

\*Inoue Prize for Science is awarded each year to five outstanding Japanese researchers under 50 years of age selected from all fields of natural science. The prize consists of 2 million JPY and a gold medal.

<sup>†</sup>JSPS Prize is a prestigious award in Japan for outstanding mid-career researchers under 45 years of age. Each year, about 20 awardees are selected from all fields of academia, and the prize ceremony is attended by a member of the royal family. The prize consists of 1.1 million JPY and a silver medal.