

Jeffrey S. Cross, Ph.D. Biosketch



Professor in Energy Science and Engineering, Departments of Transdisciplinary Science and Engineering, School of Environment and Society; Materials Science and Engineering, School of Materials and Chemical Technology; General Manager Online Content Research & Development Section, Center for Innovative Teaching & Learning

Tokyo Institute of Technology

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Education

1988-1992 Ph.D., Major: Ch.E., Minor: Mater. Sci., Iowa State University, Ames, IA, USA
1986-1988 M.S., Ch.E., University of Arkansas, Fayetteville, AR, USA
1982-1986 B.S., Ch.E., Kansas State University, Manhattan, KS, USA (Honors program)

Employment History

2016-Now Tokyo Tech, Professor, Graduate Coordinator Energy Science and Engineering, Department of Transdisciplinary Science and Engineering and other dept.
2014-Now Tokyo Tech, Founder and General Manager Online Education Development Office, Center for Innovative Teaching and Learning
2011-2016 Tokyo Tech, Prof. and Adjunct in 3 different graduate engineering dept.
2008-2016 Tokyo Tech, Professor, Dept. Engr. Fundamentals & Strategic Planning
2006-2008 Tokyo Tech, Visiting Professor, Ceramics Science
2002-2005 Tokyo Tech, Visiting Associate Professor, Ceramics Science
2002-2008 Fujitsu Lab Ltd., Senior Researcher, Atsugi, Japan
2002-2005 Tokyo Tech, Visiting Lecturer, Chem. Engr. Dept.
1996-2002 Fujitsu Lab Ltd., Staff Researcher, Atsugi, Japan
1994-1996 US-NSF CGP Postdoctoral Fellowship, Fujitsu Lab. Ltd., Atsugi, Japan
1994 Japan NIRIM-COE Postdoctoral Fellowship, NIRIM (now NIMS), Tsukuba, Japan
1993-1994 Japan STA US-NSF Postdoctoral Fellowship, NIRIM (now NIMS), Tsukuba, Japan

Research Topics

Japan Energy Policy/AI, Waste to Energy Transformation research and AI, Educational Technology/AI, On-line courses and learning analytics, Personalized Learning, Engineering Edu

Teaching

Technical communications, scientific writing, learning management systems, online course video-making, introduction to materials engineering, engineering measurements

International Student Exchange Activities and Service

Steering Committee Chairman of [Asia-Oceania Top University League](#) in Engineering ([AOTULE](#)) from 2011-2015, Co-chair Tokyo Tech Summer Program committee and General Manager Online Content ([OCRD](#)) Section, Center for Innovative Teaching and Learning, Tokyo Tech, UK-Japan Engineering Education League secretariat ([UKJEEL](#))

Journal Reviewing and Expertise

- Journal manuscript reviewer for materials, semiconductor devices and applied physics: Appl. Phys. Letter, J. Appl. Phys., Mater. Res. Soc., Japan J. Appl. Phys., Various Conference Proceedings

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- Jeffrey is a hands-on educator, researcher and project manager with over 25 years of experience in working in industry, academia and at a national laboratory in Japan. He relishes working closely with his students to develop their full capacity in his interdisciplinary lab and developing new technology.
- Native speaker of American English and somewhat fluent in Japanese

Awards	2021	Tokyo Institute of Technology Best Engineering Teacher Award
	2019	IEEE Education Society Learning with MOOCs Conference Best Paper Award
	2018	Tokyo Institute of Technology Best Teacher Award (ACEEES)
	2018	Tokyo Institute of Technology Best Teacher Award (Online Courses)
	2015	Japan Univ. ICT Advancement Society (AXIES) Best Paper Award
	2013	Tokyo Institute of Technology Teacher of the Year Award
	2013	Tokyo Institute of Technology School of Engineering Teacher of Year Award
	2004	Fujitsu Lab Ltd., Outstanding Patent Award
	2004	Japan Ceramic Society, Outstanding Paper and Technology Award

Recent peer reviewed publications

- (1) Machine learning based analysis of reaction phenomena in catalytic lignin depolymerization, AC Garcia, C Shuo, JS Cross, *Bioresource Technology* 345, 126503 (2022)
- (2) Biomass Feedstocks for Liquid Biofuels Production in Hawaii & Tropical Islands: A Review. M Usman, S Cheng, JS Cross *International Journal of Renewable Energy Development* 11 (2022)
- (3) Investigating Mechanical Engineering Learners' Satisfaction with a Revised Monozukuri MOOC, MKJ Carlon, MR Gaddem, C Augusto, H Reyes, T Nagahama, JS Cross *EMOOCs Conference*, 237, (2021)
- (4) Can Japan Meet Its 2030 Nuclear Power Target? R Zissler, JS Cross, *Journal of Asian Energy Studies* 5 (1) (2021).
- (5) Improving MOOC quality using learning analytics tools, Jeffrey Scott Cross, May Kristine Jonson Carlon, Zarina Rakhimberdina, Nopphon Keerativoranan, Yong Hong Tan, Hideki Mori., *IEEE Learning with MOOCs Conference Proceedings*, Milwaukee, WI, USA Oct. 2019
- (6) Development of a Mechanical Engineering Test Item Bank to promote learning outcomes-based education in Japanese and Indonesian higher education institutions, J.S. Cross et al, *Tuning J. Higher Edu.* 5, (2017).

Most cited publications

- (1) Electrochemistry at Chemically Modified Graphenes, A. Ambrosi, A. Bonanni, Z. Sofer, J. S. Cross, and M. Pumera, *Chemistry - A European Journal*, 17, 10763-70 (2011). **ISI Citations: 304**
- (2) Non-Kolmogorov-Avrami switching kinetics in ferroelectric thin films, A. K. Tagantsev, I. Stolichnov, N. Setter, J. S. Cross, and M. Tsukada, *Phys. Rev. B* 66, 214109 (2002). **ISI Citations: 398**

Memberships

Materials Research Society, Japan Ceramic Society, American Society for Engineering Education, International House of Japan

Book Chapter

- (1) Tagaya M, Scott CJ, Ikoma T, Tanaka J. Application of a Quartz Crystal Microbalance with Dissipation for In Situ Monitoring of Interfacial Phenomena between Bioceramics and Cells. In: *Handbook of Advanced Ceramics: Materials, Applications, Processing, and Properties*. Academic Press: Elsevier Inc.; 2013. p. 557–75.