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Fellow of the IEEE, American Institute for Medical and Biological Engineering, Optical Society (OSA), European Optical Society (EOS), and the SPIE

## 講演タイトル: Advances in Three Dimensional Sensing, Visualization, and Display

日時: 2016年10月28日(金) 13:00~14:30

会場:東京農工大学 工学部 小金井キャンパス(JR東小金井駅 nonowa口より徒歩約6分)新1号館1階 グリーンホール

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講演內容: Three-dimensional (3-D) imaging systems are considered for mass markets in entertainment and communication. Three-dimensionality is considered an added benefit in imaging devices, and the search for an optimum 3D imaging and display technique is an important research area. 3D monitors should provide the observers with different perspectives of a 3D scene by simply varying the head position. In this seminar, we present an overview of our work on multi view imaging systems for 3D sensing, visualization, and display [1-4]. 3D imaging systems promise a new paradigm in communications, including 3D TV, 3D cinema, 3D displays for mobile phones, education, communication, and entertainment. The seminar will address some of the limitations of 3D integral imaging systems, including limited depth of field, the pseudoscopic-to-orthoscopic conversion, production of 3D images with continuous relief, and the limited range of viewing angles of 3D imaging systems. Theoretical and experimental results will be presented, and various applications and technical challenges of integral imaging will be discussed.

## REFERENCES

- [1] B. Javidi, F. Okano, and J. Y. Son, "Three Dimensional Imaging, Visualization, and Display," Springer, 2009.
- [2] B. Javidi and F. Okano, "Three Dimensional Television, Video, and Display Technologies," Springer Verlag Berlin, 2002.
- [3] R. Martinez-Cuenca, G. Saavedra, M. Martinez-Corral, and B. Javidi, "Progress in 3-D Multiperspective Display by Integral Imaging," Proceedings of the IEEE Journal, Volume 97, Issue 6, pp. 1067-1077, June 2009.
- [4] Xiao Xiao, Bahram Javidi, Manuel Martinez-Corral, and Adrian Stern, "Advances in Three-Dimensional Integral Imaging: Sensing, Display, and Applications," Journal of Applied Optics, Vol. 52, Iss. 4, pp. 546–560 (1 February 2013) [Invited Paper]



**Bahram Javidi** is The Board of Trustees Distinguished Professor at University of Connecticut. His research interests are in transformative approaches to optical imaging sciences, including imaging at nano scales. Dr. Javidi has been named a Fellow of eight scientific societies, including the IEEE, American Institute for Medical and Biological Engineering, Optical Society (OSA), European Optical Society (EOS), and the SPIE. In 2008, he was named a John Simon Guggenheim Foundation Fellow. He is recognized by nine best paper awards from IEEE, OSA, EOS, and SPIE. Dr. Javidi is the recipient of various honors, including the IEEE Donald G. Fink Prize Paper Award (2008), George Washington University's Distinguished Alumni Scholar Award (2010), Alexander von Humboldt Foundation's Humboldt Prize for outstanding U.S. scientists (2007), SPIE's Technology Achievement Award (2008), SPIE's Dennis Gabor Award in Diffractive Wave Technologies (2005), and the IEEE

Photonics Society's Distinguished Lecturer Award (2003 and 2004). Early in his career, he was named a National Science Foundation Presidential Young Investigator, and received an Engineering Foundation and an IEEE Faculty Initiation Award. In 2003, the National Academy of Engineering selected him as one of the nation's top engineers aged 30-45 to present his research at the sixth German-American Frontiers of Engineering Symposium. He has 1000 publications, including nine books, 54 book chapters, 440 peer reviewed journal articles, 450 conference proceedings, and 130 plenary addresses, keynote addresses and invited conference papers. His papers have appeared in the *Proceedings of the IEEE Journal, Journal of the Royal Society, Physics Today* and *Nature.* His publications have been cited 32000 times [h-index=83] according to Google Scholar. He has served as a member of the Editorial Board of the *Proceedings of the IEEE Journal* (ranked number one among all EE journals and transactions), member of the Advisory Board of the IEEE Photonics Journal, and on the Board of Directors of SPIE.

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