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Professor Qing Hu is a principal investigator in the Research Laboratory of Electronics (RLE) at the Massachusetts Institute of Technology (MIT). He received his B.A. from Lanzhou University in 1981 and his Ph.D. in physics from Harvard University in 1987. From 1987 to 1989, he was a postdoctoral associate at University of California, Berkeley. He joined the MIT faculty in 1990 in the Department of Electrical Engineering and Computer Science. He was promoted to full professor in 2002.

Professor Hu has made significant contributions to physics and device applications over a broad electromagnetic spectrum from millimeter wave, THz, to infrared frequencies. Among these contributions, the most distinctive is his development of high-performance terahertz (THz) quantum cascade lasers (QCLs). Now this breakthrough has already found applications in heterodyne receiver technology and real-time THz imaging, which was also pioneered by his group. He is a Fellow of the Optical Society of America (OSA), a Fellow of the American Physical Society (APS), a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and a Fellow of the American Association for the Advancement of Science (AAAS). He is the recipient of 2012 IEEE Photonics Society William Streifer Scientific Achievement Award. He has been an Associate Editor of Applied Physics Letters since 2006, and was the co-chair of 2006 International Workshop on Quantum Cascade Lasers.

Professor Hu's current research interests focus on the development of high-temperature, high-power, high beam-quality, and broadly tunable THz QCLs; THz amplifiers; ultrafast time- and phase-resolved study of dynamics in quantum structures; sensing and real-time imaging THz systems for a variety of applications including remote sensing, biomedical imaging, and security.

Keywords

terahertz quantum cascade lasers, millimeter-wave devices, terahertz spectrometers, infrared devices, semiconductor quantum effect devices, bipolar transistors

Selected Publications

05.11.2014
 Terahertz laser frequency combs (Nature Photonics)

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Related News Links

08.10.2012
 Hu awarded IEEE Photonics Society achievement award

12.16.2010
 New hope for terahertz

12.17.2009
 Qing Hu named AAAS fellow: among eight MIT researchers recognized for 'scientifically or socially distinguished' contributions

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 Generating Terahertz Laser Frequency Combs

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 Hu, Soljacic, and Perreault named 2013 Invented Here! Honorees

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 Professors Qing Hu and Gregory W. Wornell promoted to full Professor

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