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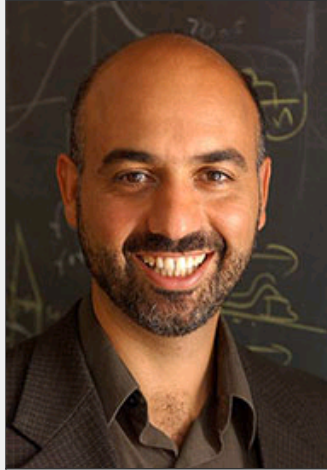
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Faculty

RAYMOND ASHOORI

Professor



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Related Links:

[Ashoori Group](#)

Area of Physics:

[Condensed Matter Experiment](#)

Research Interests

The principle focus of research of the Ashoori Group lies in the study of interacting electronic systems in low dimensional semiconductor structures. Systems in which electrons exist purely in two or one dimensions and even small boxes (quantum dots) containing as few as one electron can now be produced with relative ease. While simple quantum mechanical calculations determine the motion of a single electron in such a confining structures, it is far from simple to understand the behavior of many trapped electrons. Not only do the electrons repel one another, they are indistinguishable. This fact, along with the principle that only one electron can exist in any quantum mechanical orbit, produces unusual and sometimes counterintuitive correlations in the motions of electrons.

Biographical Sketch

A graduate of the University of California at San Diego (B.A. 1984) and Cornell University (Ph.D. 1991), Professor Ashoori joined the MIT faculty in 1993, after serving as a postdoctoral member of the technical staff at AT&T Bell Laboratories. He was promoted to Associate Professor in 1998 and full Professor in July 2004.

Selected Publications

- Lu Li, C. Richter, S. Paetel, T. Kopp, J. Mannhart, R. C. Ashoori. " [Very Large Capacitance Enhancement in a Two-Dimensional Electron System](#)", Science, 332, 825-828 (2011)
- Lu Li, C. Richter, J. Mannhart R. C. Ashoori, " [Coexistence of magnetic order and two-](#)

[dimensional superconductivity at LaAlO₃/SrTiO₃ interfaces](#)" Nature Physics 7, 762-766 (2011)


- O.E. Dial, R.C. Ashoori, L.N. Pfeiffer, K.W. West. " [Anomalous structure in the single particle spectrum of the fractional quantum Hall effect](#)", Nature 464, 566-570 (2010)
- O.E. Dial, R.C. Ashoori, L.N. Pfeiffer, K.W. West. " [High-resolution spectroscopy of two-dimensional electron systems](#)" , Nature, Vol. 448, 176-179, (2007)
- G.A. Steele, R.C. Ashoori, L.N. Pfeiffer, K.W. West, " [Imaging single electron resonant tunneling in the quantum Hall liquid](#)" , Physical Review Letters, 95, 136804 (2005)

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