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Professor Chandrashekhar Joshi's Plasma Accelerator Group is world renowned for developing the multidisciplinary field of laser and electron beam-driven plasma accelerators over the past three decades. From fundamental research, Plasma Accelerators has now evolved into an engineering subfield. Joshi's UCLA group was the first to conclusively demonstrate the acceleration of electrons thousands of time more rapidly using relativistically propagating plasma waves than using conventional accelerators.

Initially such plasma waves were excited using laser beams. This was followed by a series of elegant beam-driven plasma particle acceleration experiments using high-energy electron and positron beams at the Stanford Linear Accelerator Center. These experiments showed energy doubling of 42 billion volt electrons from the 3 km long SLAC linear accelerator in less than a meter of plasma accelerator. Joshi and his coworkers have been the first to reach nearly every major technical milestone in the field of plasma accelerators. These includes the first demonstration of acceleration of externally injected electrons by waves in plasmas, first breaking of the 1 MeV, 10 MeV, 100 MeV, 1 GeV and 10 GeV energy barriers and producing energies of interest needed to understand the fundamental nature of matter and forces in the 21st century. These results are deemed paradigm changing in both the Accelerator Technology and Plasma Physics communities and Joshi is recognized for his role by being awarded several major prizes.

Joshi is truly the father of the experimental field of Plasma Accelerators. He established the very first group in this area in 1980 and trained a generation of students, postdocs and researchers (about 50), many whom have started their own programs and have now become leaders in this field in the US and in many other countries. Major facilities have been built at SLAC and LBNL and many others are in the planning stage or being built overseas to develop Plasma Accelerators further.

AWARDS

National Academy of Engineering	2014
Distinguished Engineering Educator Award: Engineers' Council	2014
IEEE Particle Accelerator Science and Technology Award	2009
Advanced Accelerator Concepts Award	2008
James Clerk Maxwell Prize, APS	2006
USPAS Prize for Achievement in Accelerator Physics and Technology	1997
Excellence in Plasma Physics Research Award, APS	1996
Queen Mary College Prize, Institute of Nuclear Engineers UK	1974

HONORS

Visiting Professor: Imperial College, London University	2010-present
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Contributions Cited in <i>Engines of Discovery: A Century of Particle Accelerators</i>	2007
APS Distinguished Lecturer in Plasma Physics	2001-02
APS Centennial Speaker	1999
Fellow, Institute of Physics, UK	1998
Best Invited Paper Award, Gordon Conference on Nonlinear Optics and Lasers	1997
Physics News	1993, 2001, 2003
Fellow, IEEE	1993
Fellow, American Physical Society	1990

SIGNIFICANT PUBLIC LECTURES

John Lawson Memorial Lecture, Rutherford Lab, U.K.	Oct. 2009
Distinguished Speaker in Plasma Science and Technology, Princeton University	Nov. 2007
Sir John Adams Memorial Lecture, CERN	Dec. 2007

EDITORIAL ACTIVITIES

Associate Editor, <i>New Journal of Physics</i>	2010-present
Associate Editor, <i>Journal of Plasma Physics</i>	2009-present
Guest Co-Editor, <i>New Journal of Physics, Focus Issue on Laser and Beam-Driven Plasma Accelerators</i>	December 2009
Associate Editor, <i>Reviews of Modern Physics</i>	2002-2005
Associate Editor, <i>Physical Review Special Topics AB</i>	1998-2001
Editor, <i>Advanced Accelerator Concepts, Lake Arrowhead, CA</i> AIP Conference Proceedings No. 193	1989
Co-Editor, <i>Laser Acceleration of Particle, Malibu, CA</i> , AIP Conference Proceedings No. 130	1985

SERVICE

Founding member of the field of Advanced Accelerator Concepts (1982)
 International Particle Accelerator Conference organizing committee (2000-present)
 NRC Plasma Science standing committee (2007-2009)
 National Ignition and Photon Science Review Committees at LLNL (2009-present)
 Chair of Center for Accelerator Physics (CAP) review committee at Brookhaven (1995-2005)
 IEEE NPSS (1985-1988), APS-DPP Executive Committee member (1994-1997), APS-DPB Executive Committee member (1999-2003) (elected)
 NSF (P&MS) and DOE (HEP) Committee of Visitors
 High Energy Physics Advisory Committee (HEPAP) (1998-2001)
 Nominating and Fellowship committee of APS (2007-2009)
 Maxwell (1996-97) and Wilson (1999) prize committees for APS
 IEEE PAST Award and APS-DPP Excellence in Plasma Physics Award Committees (1996-97)
 On program committees of CLEO, IEEE-NPSS, SPIE conferences
 Organization and program committees of numerous international workshops
 Referee for *Phys. Rev. Letts.*, *IEEE Trans. Plasma Science*, *Phys. Rev. A & D* etc.

PUBLICATIONS

Over 410 refereed journal and conference proceedings published. These include 51 papers in *Physical Review Letters*, 5 in *Nature*, 1 in *Nature Physics*, 1 in *Science*, and 2 in *Physics Today*.

Research featured on the cover of *Nature* (2 times), *Nature Physics*, *Physical Review Letters* (2 times), *Cern Courier*, and *Scientific American*.

SIGNIFICANT COLLABORATIONS

UCLA, USC, SLAC Collaboration on Plasma Wakefield Acceleration Funded by the US DOE	1998-2007
UCLA, RAL, Imperial College, LOA Collaboration on Self-modulated LWFA	1994-1997
UCLA- Livermore Collaboration on Laser Wakefield Acceleration Funded by UCLA and LLNL/LDRD funds	2008-present
UCLA- Tsinghua University Collaboration	2010-present
UCLA, USC, Maryland, Duke, Michigan, Berkeley and Texas Collaboration on <i>Graduate Student Training in Plasma Acceleration</i> This activity is funded by the NSF through a major 5-year grant	2010-present

GRADUATE STUDENTS

Professor Joshi has graduated 25 PhDs and another 20 MS students. Many of these students have gone on to have extremely successful careers in academia, industry and national labs. See students PhD thesis under "[research](#)".

POSTGRADUATE SCHOLARS and RESEARCHERS

Professor Joshi has mentored several outstanding postdoctoral researchers who have gone on to form their own research groups in the area of Plasma Accelerators in this country and abroad.