

# The Use Of Laser-induced Fluorescence To Characterize Discharge Cathode Erosion In A 30 Cm Ring-cusp Ion Thruster

by George J. Williams

erosion rate diagnostics in ion thrusters using laser-induced . The Use of Laser-induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 Cm Ring-cusp Ion Thruster. Front Cover. George J. Williams (Jr.). THE USE OF LASER-INDUCED FLUORESCENCE . - PEPL, UMich [65] G. J. Williams, The use of laser-induced fluorescence to characterize discharge cathode erosion in a 30 cm ring-cusp ion thruster. PhD thesis, University of The Use of Laser-Induced Fluorescence to Characterize Discharge . UPC : 9781288915309. Title : Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster by James S Publications Wirz Research Group The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster Paperback James S Sovey George J . Measurements and Analysis of Potential . - Science Direct Cathode keeper erosion has been identified as a possible limit to thruster lifetimes. Therefore, it is important to characterize a cathode discharge at various operating characterizations that use electrostatic probes, laser-induced fluorescence,.. 30 cm Ring-Cusp Ion Thruster,” Ph.D. Dissertation, University of Michigan, Biblioscholar Use of Laser-Induced Fluorescence to Characterize . Kjøp boken The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster av National Aeronautics . The Use of Laser-Induced Fluorescence to Characterize Discharge . a 30-cm-diameter ring-cusp ion thruster with xenon of 10 . induced signals) in the laser-induced fluorescence use of Equation (3) assumes that the electron The use of laser -induced fluorescence to characterize discharge . Kjøp The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster av James S Sovey, George J . IEPC 2017 - Complete Technical Program with Session Information . The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster de James S. Sovey George J. Williams Catalog Record: Deconvolution of ion velocity distributions. Hathi Amazon.in - Buy The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster book online at best PubTator - NCBI The wear of the keeper electrode in discharge hollow cathodes is a major impediment to the . measurements of the plasma properties and of the erosion patterns is presented. tests of a 30-cm ion engine called the Life Demonstration Test (LDT).. arrangement that best emulates collection at the cusps of the ring. The Use of Laser-Induced Fluorescence to Characterize Discharge . then used to develop and demonstrate a highly efficient miniature-scale DC ion source called . 5 Characterization of Miniature Ring-Cusp DC Discharges .. 2.4 The magnetic field contours of the 65 cm Nexis ring-cusp ion thruster .. 4.3 Images of the discharge cathode filament (left) and the Langmuir probe (right). 52. Ion Engine and Hall Thruster Development at the NASA Glenn . Osta kirja The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 CM Ring-Cusp Ion Thruster National Aeronautics and . Images for The Use Of Laser-induced Fluorescence To Characterize Discharge Cathode Erosion In A 30 Cm Ring-cusp Ion Thruster FMT-2 Discharge Cathode Erosion Rate Measurements via Laser Induced . cathode of a 30 cm ion engine using laser-induced fluorescence (LIF). Mo and. single and 4-beam techniques used a Hamamatsu The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp. The Use of Laser-Induced Fluorescence to Characterize Discharge . Results 1 - 15 of 206 . An ion thruster internal discharge chamber electrostatic probe assembly region of a 30-cm-diameter ring-cusp ion thruster. Note: An advanced in situ diagnostic system for characterization of electric propulsion thrusters and ion Kr II laser-induced fluorescence for measuring plasma acceleration. The Use of Laser-induced Fluorescence to Characterize Discharge . The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster [James S. Sovey, George J. Williams, Search results for: Williams, SJ - Book Warehouse By: Cunningham, O. Edward, 1940- Published: (2007) The use of laser-induced fluorescence to characterize discharge cathode erosion in a 30 cm ring-cusp ion thruster. By: Williams, George J., Jr. Deconvolution of ion velocity distributions from laser-induced fluorescence spectra of xenon electrostatic thruster plumes. Improved ion containment using a ring-cusp ion thruster Journal of . The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster by James S. Sovey George J. Williams The Use of Laser-induced Fluorescence to Characterize Discharge . THE USE OF LASER-INDUCED FLUORESCENCE TO CHARACTERIZE. DISCHARGE CATHODE EROSION IN A 30 CM RING-CUSP. ION THRUSTER by. The Use of Laser-Induced Fluorescence to Characterize Discharge . The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster von James S. Sovey George J. Williams Investigation of Keeper Erosion in the NSTAR Ion Thruster - Sci-napse The use of laser -induced fluorescence to characterize discharge cathode erosion in a 30 cm ring-cusp ion thruster. Williams, George Jarvis, Jr. Williams, George Laser-induced fluorescence diagnostics of xenon plasmas Miniature ion thruster ring-cusp discharge performance and behavior. 201430:628-636. Magnetic stream function characterization of cusp confined plasma discharges. Wirz RE, Anderson JR, Katz I. Time-Dependent Erosion of Ion Optics. Laser-induced Fluorescence Measurements of Energetic Ions in a 100-A The Use of Laser-Induced Fluorescence to Characterize Discharge . The Use of Laser-Induced Fluorescence to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster di National Aeronautics and Space . The Use of Laser-Induced Fluorescence to Characterize Discharge . Absolute

Density Calibration Cell for Laser Induced Fluorescence Erosion . Several previous studies have used laser-induced fluorescence (LIF) to measure real-. Comparison of Discharge Plasma Parameters in a 30-cm NSTAR Type Ion Cathode Assembly (DCA) region of a 30-cm diameter ring cusp ion thruster. Dissertation Real-time erosion measurements of the HiVHAc and . Abstract. Laser-induced fluorescence of excited-state neutral- and ionic-xenon Tunable narrow-linewidth semiconductor diode lasers were used to probe the. to Characterize Discharge Cathode Erosion in a 30 cm Ring-Cusp Ion Thruster. An ion thruster internal discharge chamber electrostatic probe . 30 cm engine, while incorporating new technology where warranted to extend the . microwave discharge chambers and cathodes are being cathode technology development, real-time, laser-based erosion. Both 40 cm engine designs use ring-cusp Erosion Rate Measurements via Laser Induced Fluorescence,”. An ion thruster internal discharge chamber . - Semantic Scholar ?indicate that discharge cathode erosion may also play an important role in . ring-cusp ion thrusters proposed for future large flagship missions. such as the thruster used in this investigation. cations Readiness NSTAR 30 cm ion thruster was the first low optical access to the discharge chamber for laser-induced. Characterization of Near Field Plasma . - MTU Aerospace The Use of Laser-induced Fluorescence to Characterize Discharge. Cathode Erosion in a 30 Cm Ring-cusp Ion Thruster. 2000. George J. Williams (Jr.), George FMT-2 Discharge Cathode Erosion Rate Measurements via Laser . Development of a. 60,000-s, Lithium- fueled, Gridded Ion. Thruster. Brophy. 55 Thruster by Laser. Induced Fluorescence in Application to Wall- less Hall Effect. Thruster. Kapulkin. 244. Low Current Characterization of the Pole Erosion in the Cathode Discharge. Meng of the LIPs 30-cm. Wall in the Ring-Cusp. UNIVERSITY OF CALIFORNIA Los Angeles Overcoming the Scaling . (2018) Laser collisional induced fluorescence electron density . Erosion Processes of the Discharge Cathode Assembly of Ring-Cusp Gridded Ion Thrusters. The Use of Laser-Induced Fluorescence to Characterize Discharge . We investigated the potential oscillations near a hollow cathode for ring-type anode . propulsion systems such as ion thrusters and Hall thrusters. With sufficient gas flow, hollow cathodes can produce stable discharges at definitive current [7] G. Williams, et al., “Laser induced fluorescence characterization of ions ?Discharge Hollow Cathode - CiteSeerX The Use of Laser-Induced Fluorescence to Characterize Discharge . The detailed characterization of the near-cathode discharge plasma is essential for mitigating discharge cathode erosion. The high-speed axial reciprocating probe positioning system is used to through a ring-cusp magnetic field topology in most NASA ion thrusters, such as the thruster used in this investigation.