

Richard Sydora

Plasma Physics



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RESEARCH KEYWORDS: Plasma Physics, Computational Physics

R&D CAPABILITIES

Application of plasma methods for surface modification and creation of new coating processes for use in various industrial applications and medicine. Plasma modeling capabilities for design and optimization of sputtering processes used in plasma coating technology. Other capabilities include the modeling of plasma actuators for low power flow control and drag reduction in diverse industrial and commercial settings.

TECHNIQUES & INSTRUMENTATION SERVICES

Magnetron sputtering device for plasma coating. This technique has become one of the main choices for creation of coatings with specific electrical, thermal and optical properties. For industrial applications these include coatings that are hard, corrosion-resistant, wear-resistant, low friction, etc. Together with the magnetron sputtering device we have modeling capabilities that assists in parameter optimization for the coating process.

INDUSTRY COLLABORATIONS

- 1) Working with TRW Inc. (now part of Northrop Grumann) for development of isotope production (medical and industrial applications) using plasma-based methods (Plasma Separation Process (PSP)).
- 2) Working with companies Ionic Solutions and Adelphi Technology Inc. for optimizing the design of a pulsed power plasma discharge for production of neutrons for use as a compact neutron source in industrial and medical applications.