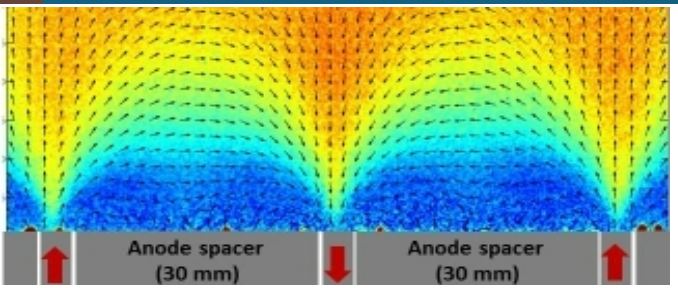
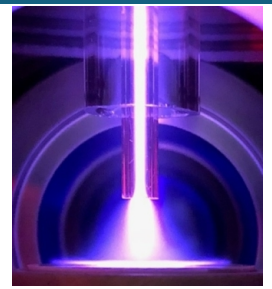
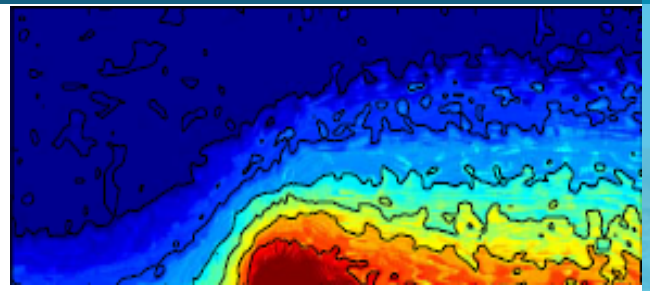
Sandia National Laboratories

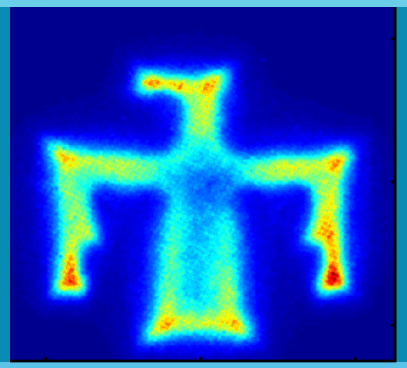
SAND2020-12946PE

SNL Plasma Research Facility









PRESENTED BY

Shane M. Sickafoose

November 2020

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SNL Plasma Research Facility Status

COVID has delayed start of most of the FY20 accepted proposals. Those projects are now starting.

We are performing two experimental projects now.

We are performing three computational projects now.

Three experimental projects, from FY20 accepted proposals, are scheduled for work in early 2021.

The team is currently working on schedule mitigation plans for collaborations due to ongoing COVID-related difficulties.

The team is working with potential collaborators to refine ideas for FY21 proposals.

Proposal Submission closes December 11th, 2020.

Recent Post-Doc added to SNL team - Dirk van den Bekerom. Formerly from Igor Adamovich's group at OSU

Current Projects

1. Absolute Atomic Oxygen Species Densities in the Effluent of the COST Reference Source
   - Brayden Myers, Katharina Stapelmann, NCSU
   - Ed Barnat, SNL
2. Tests of a proposed sheath instability mechanism using Aleph
   - Lucas Beving, Scott Baalrud, UI
   - Matt Hopkins, SNL
3. Identification of UV/VUV Bands Generated from a Photoioniation Source
   - Justin Smith, Andy Fierro, UNM
   - Ben Yee, SNL
4. Impact of Cs level populations on the discharge characteristics of non-equilibrium thermionic plasmas
   - Arvind Kannan, Modern Electron
   - Amanda Lietz, Matt Hopkins, SNL
5. Particle-in-a-Cell modeling of low pressure (<10 mTorr) high bias (>2000 V) dual-frequency capacitively coupled plasmas
   - Shahid Rauf, Applied Materials
   - Amanda Lietz, Matt Hopkins, SNL

Accepted Proposals - Near Term Starts – Early 2021

1. Electric Field Measurements at the Surface of a Peizoelectric Transformer for Plasma Jet Formation
   - Jinyu Yang, David Go, Notre Dame
   - Ed Barnat, SNL (January 2021)

2. Electric Field Measurements to investigate sheath formation in a nanosecond pulsed discharge
   - Yuanfu Yue, Peter Bruggeman, U of Minnesota
   - Ed Barnat, SNL (February 2021)

3. Studies of plasma generated active species on low temperature fuel oxidation
   - Christopher Burger, Yiguang Ju, Princeton
   - Nils Hansen, SNL (January 2021)

4. Studies of low temperature chemical kinetics on plasma thermal-chemical instability
   - Yiguang Ju, Princeton
   - Chris Kliewer, SNL