



**Visit Tech-X at Booth #6 at the combined 53<sup>rd</sup> Annual Meeting of the APS Division of Plasma Physics and 64<sup>th</sup> Gaseous Electronics Conference in Salt Lake City**

This year the 53<sup>rd</sup> Annual Meeting of the APS Division of Plasma Physics (<http://apsdpp.org/index.php>) is co-located with 64<sup>th</sup> Gaseous Electronics Conference (<http://cm.wsu.edu/ehome/index.php?eventid=23665&>), being held the November 14-18, 2011 in Salt Lake City, Utah. Tech-X Corporation invites you to visit our booth (Booth #6) at this combined conference.

We are proud to present the latest release of our electromagnetic plasma simulation software, VORPAL (<http://vorpall.txcorp.com>). VORPAL 5.0.0 includes improved documentation, simplified installation on all platforms, additional collision models, import of user-defined secondary electron yield data, a new photoemission model, delta-F particles for modeling tokamak geometries, and new field updaters.

Personnel from Tech-X and/or their collaborators will be participating in the following activities:

**Session BO4: NSTX and Spherical Torus  
9:30 AM–12:30 PM, Monday, November 14, 2011  
Ballroom E**

**12:18PM – 12:30PM BO4.00015 : Verification of bootstrap current models**, Alexei Pankin, Scott Kruger, Tech-X Corporation; Emily Belli General Atomics; James Callen University of Wisconsin; Arnold Kritz, Tariq Rafiq, Lehigh University

**Session BP9: Poster Session I: Magnetic Reconnection I; Plasma Astrophysics Theory; Laboratory Plasma Astrophysics; MST and Other Reversed Field Pinches; Laser and Beam Driven Acceleration  
9:30 AM–9:30 AM, Monday, November 14, 2011  
Hall A**

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**BP9.00105 : Coupling laser pulses and low-emittance lepton bunches into 10 GeV laser plasma stages**, David Bruhwiler, Estelle Cormier-Michel, Ben Cowan, John Cary, Tech-X Corporation; Cameron Geddes, Min Chen, Eric Esarey Lawrence Berkeley Lab

**BP9.00106 : Low noise particle in cell simulations of laser plasma accelerator stages**, Estelle Cormier-Michel, D.L. Bruhwiler, B.M. Cowan, J.R. Cary, Tech-X Corporation; C.G.R. Geddes, E. Esarey, C.B. Schroeder, W.P. Leemans Lawrence Berkeley National Laboratory

**BP9.00121 : Modeling GeV-class single-stage laser-plasma electron acceleration in the blowout regime**, K. Bunkers, S.Y. Kalmykov, B.A. Shadwick, D.P. Umstadter, University of Nebraska – Lincoln; A. Beck, E. Lefebvre, CEA, DAM, DIF, Arpajon, France; B.M. Cowan, D.L. Bruhwiler, Tech-X Corporation

### **Session CP9: Poster Session II: Waves, Turbulence and Flow; Non-Neutral & Dusty Plasma I; Field Reversed Configuration and Spheromaks**

**2:00 PM–2:00 PM, Monday, November 14, 2011**

**Hall A**

**CP9.00079 : Progress of Parallel Validation Tools for Fusion Simulations as Applied to Synthetic Diagnostic Efforts**, Srinath Vadlamani, Sveta Shasharina, Scott Kruger, Mark Durant, Dimitre Dimitrov, Tech-X Corporation; Chris Holland, University of California San Diego; Jeff Candy, General Atomics; Scott Parker, Yang Chen, Weigang Wan, University of Colorado-Boulder; Allen Sanderson, University of Utah

### **Session GO7: Particle Beams and Accelerators**

**9:30 AM–12:30 PM, Tuesday, November 15, 2011**

**Ballroom H**

**GO7.00006 : Novel Simulation Methods in the Particle-In-Cell Framework Warp**  
**10:30 AM–10:42 AM**, J.-L. Vay, D.P. Dave, R.H. Cohen, A. Friedman, M.A. Furman, R. Secondo, M. Venturini, C.G.R. Geddes, Lawrence Berkeley National Laboratory; E. Cormier-Michel, Tech-X Corporation

**GO7.00008 : A Self-consistent General Thermal Field Emission Model**  
**10:54 AM–11:06 AM**, M.C. Lin, Tech-X Corporation

### **GO7.00011 : Wakefield Generation in Compact Rectangular Dielectric Loaded Structures Using Flat Beams**

**11:30 AM–11:42 AM**, Peter Stoltz, Tech-X Corporation; Philippe Piot, Northern Illinois University; Ben Cowan, Tech-X Corporation; Francois Lemery, Northern Illinois

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University; Daniel Mihalcea, Fermilab; Chris Prokop, Northern Illinois University; Jonathan Smith, Tech-X UK Ltd.; David Smithe, Tech-X Corporation

**Session GP9: Poster Session III: Fundamental Theory and Modeling I; ITER and Magnetic Fusion Development; Plasma Confinement Configurations & Stellarator; ICF and HED Plasmas, Simulations, Hydrodynamic Instability**  
**9:30 AM–9:30 AM, Tuesday, November 15, 2011**  
**Hall A**

**GP9.00087 : Finite beta stellarator simulations using NIMROD**, M. Schlutt, C.C. Hegna, C.R. Sovinec, University of Wisconsin-Madison; E. Held, Utah St. University; S.E. Kruger Tech-X Corporation; J. Hebert, Auburn University

**Session JP9: Poster Session VI: Education/Outreach; Undergrad/High School Research; Solar, Interplanetary, and Magnetospheric Plasma Physics; Divertors, Edge Physics/Fueling, Simulation/Modeling of Magnetic Conf.; Mini-Conf. on Understanding Astrophysical Dynam**  
**I**  
**2:00 PM–2:00 PM, Tuesday, November 15, 2011**  
**Hall A**

**JP9.00120 : The effects of applied 3-D magnetic fields and resistive wall boundary conditions on nonlinear MHD simulations**, A.L. Montgomery, C.C. Hegna, C.R. Sovinec, A.J. Cole, University of Wisconsin, Madison; S.E. Kruger, Tech-X Corporation

**JP9.00144 : Implementation of and first results from FACETS embedded core turbulence transport solver**, Johan Carlsson, Ammar Hakim, Tech-X Corporation; Tom Epperly Lawrence Livermore National Laboratory

**Session NP9: Poster Session V: Magnetic Reconnection II, Fundamental Theory and Modeling II, Flow; MFE Heating & Current Drive; Laser Plasma Interactions and Fast and Shock Ignition**  
**9:30 AM–9:30 AM, Wednesday, November 16, 2011**  
**Hall A**

**NP9.00067 : Simulation of RF Antenna Loading with 3-D Time-Domain Model Including Edge Plasma**, David Smithe, Travis Austin, Christine Roark, Tech-X Corporation

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### **NP9.00072 : ECCD-induced tearing mode stabilization in coupled**

**IPS/NIMROD/GENRAY HPC simulations**, Thomas Jenkins, S.E. Kruger, Tech-X Corporation; E.D. Held, Utah State University; R.W. Harvey, CompX; W.R. Elwasif, OakRidge National Laboratory; D.D. Schnack, University of Wisconsin – Madison

### **Session TO7: Coherent Radiation Sources**

**9:30 AM–12:30 PM, Thursday, November 17, 2011**

#### **Ballroom H**

### **TO7.00008 : Simulation methods for laser-plasma based x-ray sources**

**10:54 AM–11:06 AM**, Benjamin Cowan, Estelle Cormier-Michel, David Bruhwiler, Tech-X Corporation; Serguei Kalmykov, Bradley Shadwick, Kyle Bunkers, Donald Umstadter, University of Nebraska, Lincoln

### **Session TP9: Poster Session VII: DIII-D I; Theory, Turbulence II, Non-neutral and Dusty Plasma II; Magneto Inertial Fusion; MFE Diagnostics & General Tokamak; Mini-conference: Dense Quantum Plasma Simulation**

**9:30 AM–9:30 AM, Thursday, November 17, 2011**

#### **Hall A**

**TP9.00042 : Nonlinear plasma-wave interactions during ion cyclotron wave heating**, Nong Xiang, University of Colorado at Boulder; John R. Cary, University of Colorado and Tech-X Corporation; C.Y. Gan, Institute of Plasma Physics, CAS

**TP9.00094 : Eulerian and Lagrangian Plasma Jet Modeling for the Plasma Liner Experiment**, Richard Hatcher, Jason Cassibry, Milos Stanic, University of Alabama at Huntsville; John Loverich, Ammar Hakim, Tech-X Corporation

**TP9.00096 : 3D modeling of merging plasma jets**, John Loverich, Ammar Hakim, Sean Zhou, Tech-X Corporation

**TP9.00107 : MHD simulation of direct laser-driven magnetic-flux compression with Nautilus**, C.D. Zhou, J. Loverich, A. Hakim, Tech-X Corporation

### **Session UP9: Poster Session VIII: C-Mod Tokamak; DIII-D II; Solar, Interplanetary, and Magnetospheric Plasma Physics; Plasma Technology;**

**2:00 PM–2:00 PM, Thursday, November 17, 2011**

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**UP9.00097 : Non-linear modeling of RF in fusion grade plasmas**, Travis Austin,  
David Smithe, Ammar Hakim, Thomas Jenkins, Tech-X Corporation

**Session YP9: Poster Session IX: Beams and Coherent Radiation;  
Supplemental Posters; Post-Deadline Posters  
9:30 AM–9:30 AM, Friday, November 18, 2011  
Hall A**

**YP9.00041 : 3D CFDTD PIC Simulation Study on Low-Frequency Oscillations in a  
Gyrotron**, M.C. Lin, D.N. Smithe, Tech-X Corporation

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