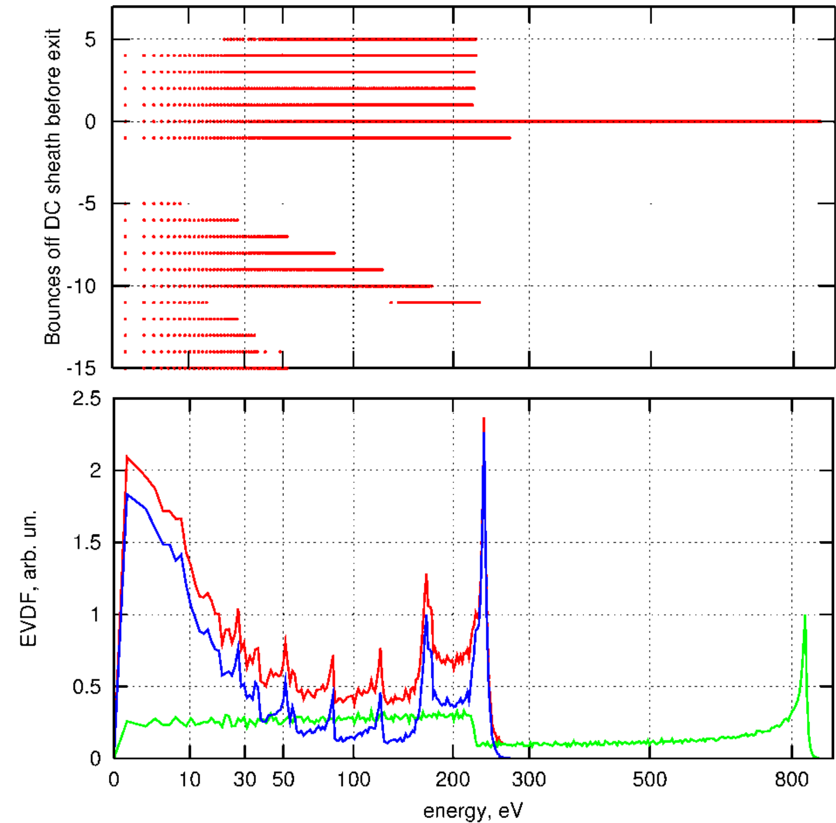
Complex Electron Energy Distribution in Asymmetric RF-DC Discharge

- **Low-pressure capacitively-coupled discharges with additional DC bias applied to a separate electrode are important for plasma-assisted etching for semiconductor device manufacturing. Measurements of the electron energy distribution function (EEDF) impinging on the wafer and in the plasma bulk show complex structure of EEDF with multiple peaks and steps.**
- **An analytical model has been developed to predict existence of peaked and step-like structures in the EVDF. These features can be explained by analyzing the kinematics of electron trajectories in the discharge gap.**



- **Electron Energy Distribution Function showing correlation between number of bounces and energy peaks**

HIGHLIGHT

PPPL
PRINCETON PLASMA PHYSICS LABORATORY

Center for Predictive Control of Plasma Kinetics: Multi-Phase and Bounded Systems

PSC
Department of Energy Plasma Science Center

DOE Plasma Science Center
Control of Plasma Kinetics