

Using Thomson scattering to measure the electron properties of pulsed helium APNPJs

Researchers from Frank Reidy Research center for Bioelectric (Old Dominion University) have been investigating relatively short duration (>200ns) pulsed helium atmospheric-pressure nanosecond pulsed jets (APNPJs) in air using Thomson scattering (TS), measuring the electron properties of the jets. They utilize similar APNPJ geometry and pulse parameters that have previously been applied for dental and biomedical applications. Their measurements have made an attempt to elucidate the role of electronic collisions in production of reactive plasma species and provide additional experimental validations for numerical models. For performing optical emission spectroscopy their setup uses a TriVista 555 triple grating spectrograph coupled to a PIMAX ICCD (GenIII) camera. The scattering images were rotated 90 degrees before being projected onto entrance slit of TriVista using pair of dichroic laser mirrors and spectral resolution of 0.17 nm was obtained using this detection system.

Featured Paper/Publication: [Electron densities and temperature of an atmospheric-pressure nanosecond pulsed helium plasma jet in air](#),
Plasma Source Science and Technology, 14 (2019)

Reference Lab: [Chunqi Jiang, Plasma and Pulsed Power Group](#), Frank Reidy Research Centre for Bioelectric, Old Dominion University Norfolk, VA, US

Featured Product: [TriVista 555, PI-MAX](#)