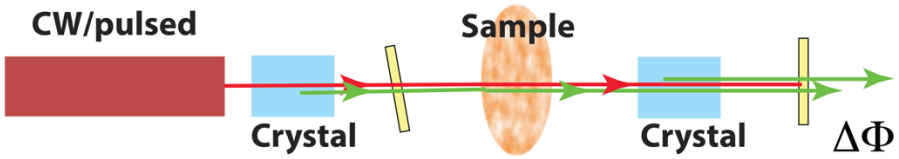
L-Egant Solutions

High-Voltage, Pulsed-Power Components, and Systems:
Solutions for Science, Engineering, and Technology

New Product - June 2023

SECOND HARMONIC DISPERSION INTERFEROMETER

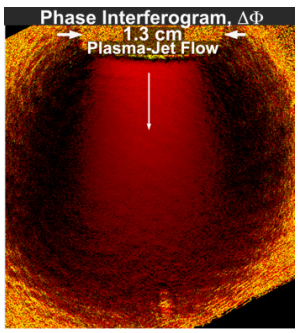


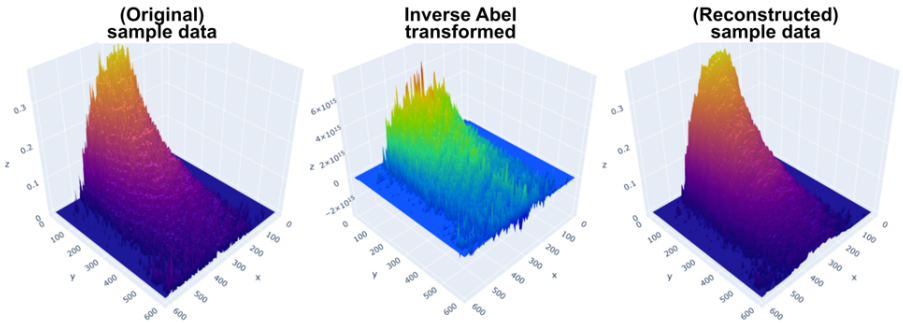
$$\Delta\Phi = \frac{4\pi}{\lambda}\int\{n(\lambda/2)-n(\lambda)\}dl$$

A Second-Harmonic dispersion interferometer (SHDI) can precisely measure the densities of plasma, neutral-gas, and other dispersive media, using two, co-linear laser beams at two wavelengths (532 and 1064 nm). The beam paths are co-linear, eliminating common-mode noise and providing high sensitivity in a stable platform. The instrument is simple, low-cost, and easy to maintain. Prices start around $45,000 for a CW system, and around $70,000 for a pulsed, imaging system. The principal design features are:

- Two compact, lightweight units (50 x 15 x 30cm).
- Vibration isolation is not needed.
- Installation takes a couple of days. Alignment takes a few minutes.
- The measurement is either continuous, or pulsed, with a spatial resolution ≈ 100 μm.
- Software is included for instrument operation and data analysis.
- Pathlengths range from mm's to m's. The minimum phase-shift is, $\Delta\Phi \geq 10^{-2}$ radians.
- The density-path integral is, $\int n \cdot dl \geq 10^{14}$ cm^{-2} for plasma, and $\int n \cdot dl \geq 10^{16}$ cm^{-2} for gas.
- The upper limit density-path integral is, $\int n \cdot dl \leq 10^{20}$ cm^{-2}.

PULSED-PLASMA JET





17165 Von Karman Ave., Suite 102, Irvine, CA 92614

http://www.L-EgantSolutions.com , fwessel@L-EgantSolutions.com , +1 (657) 210-2997