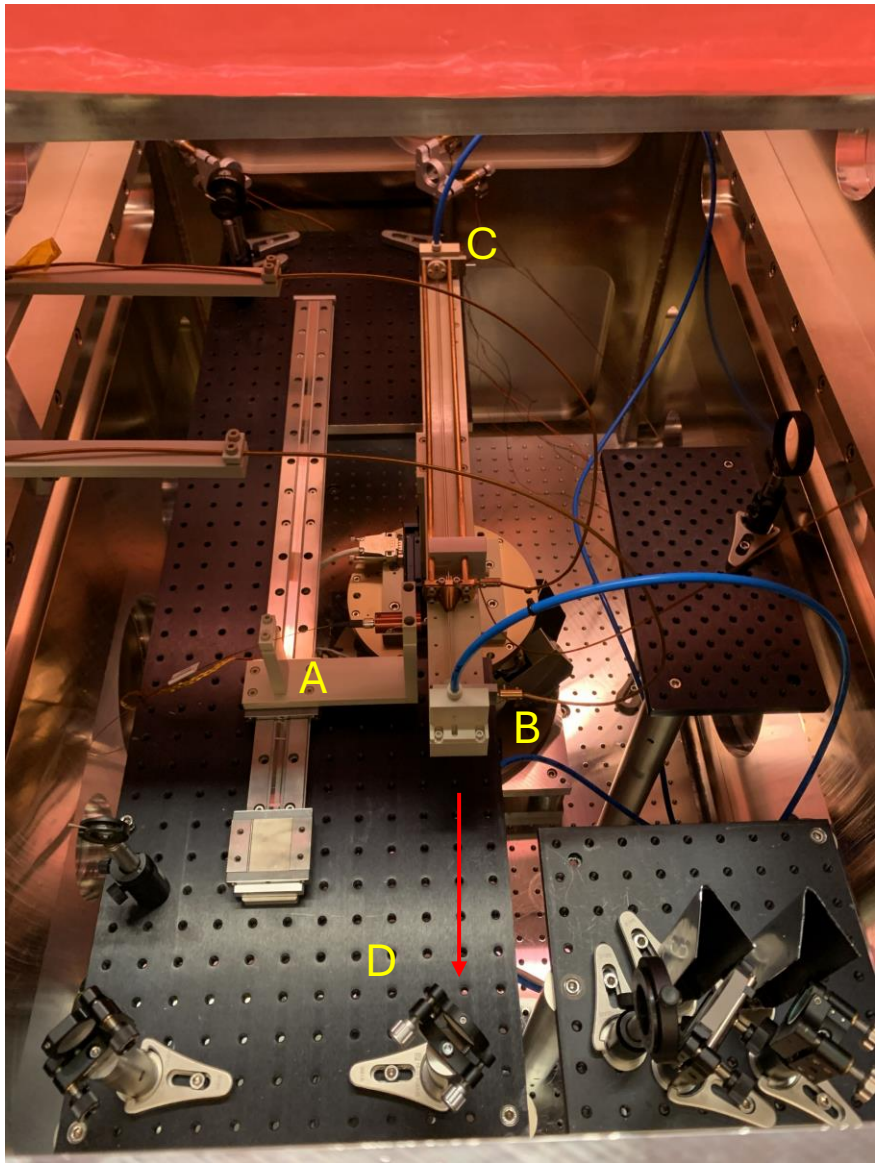
Plasma Source Diagnostics Update



Recently much work has been done to upgrade our plasma source testing & diagnostics capabilities in the ADVANCE Lab at DESY, here shown around a 500 mm long discharge capillary.

A. Movable collimator to collect light emitted from the plasma. Its spectrum contains information about the plasma density and temperature. UV-compatible fibres allow us to measure shorter wavelengths (important for many-eV temperatures). By moving its position using the stage, the longitudinal density and temperature profile can be mapped.
B. Fibre-based plasma source temperature measurement.
C. The gas system was upgrade such that each inlet (one at either end) has an independently variable flow rate, permitting plasma ramps to be created or better control over the flatness of the density profile.
D. Two-colour interferometry setup using a ~ 50 fs pulse, which will produce longitudinally integrated, radially resolved density maps with high time resolution.