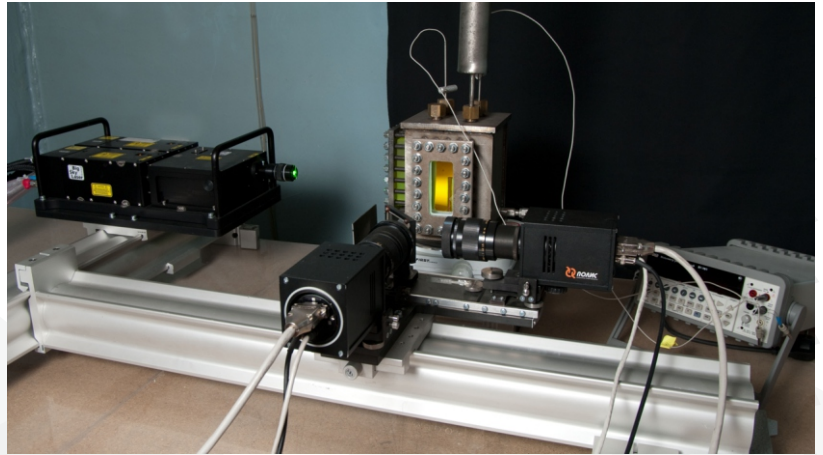


POLIS: temperature field measurement system

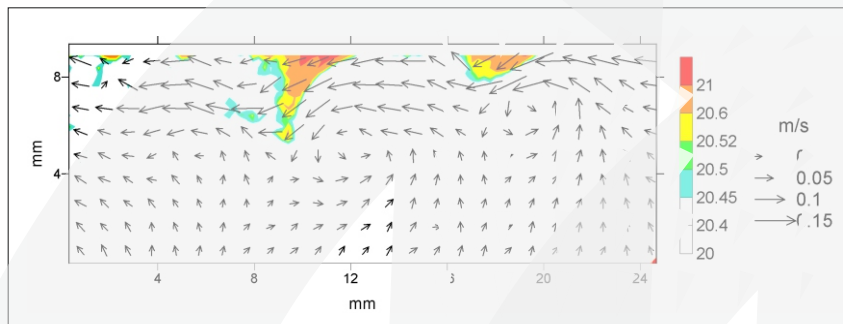
POLIS measurement system can be applied for instantaneous temperature field measurement in the liquid flow plane. The system is based on Planar Laser Induced Fluorescence technique (PLIF). Temperature field is defined on fluorescent dye emission intensity dissolved in liquid illuminated by laser sheet. It is possible to measure temperature field and velocity field at the same flow plane simultaneously using PLIF and PIV techniques.

PLIF technique features:

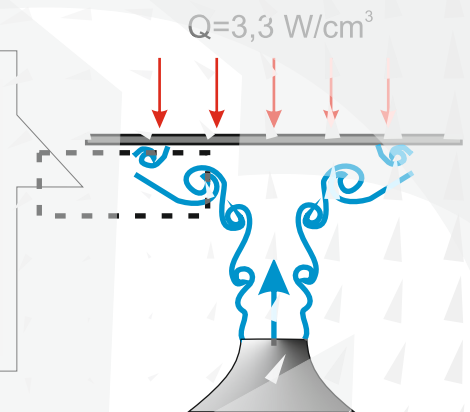
- › instantaneous temperature field measurements in liquid flows;
- › temperature range is from 10 to 150° C (depends on fluorescent dye);
- › measurement error not more than 0,4° C;
- › temperature field spatial resolution is about 500x500 points (depends on camera resolution);
- › can be used in optically transparent media;
- › the technique is easy combined with PIV and Stereo PIV techniques for simultaneous velocity and temperature measurements



POLIS system for velocity and temperature field measurements using PIV/PLIF techniques



Velocity and temperature field in the impinging jet (courtesy of IT SB RAS)



Applications:

- › heat transfer and heat exchange in liquids;
- › convection;
- › heat transfer in microchannels;
- › heat exchange optimization in different technical devices.

Measurement system components:

- › laser with lens for laser sheet formation;
- › CCD camera;
- › set of optical filters and fluorescent dyes;
- › ActualFlow software with PLIF Kit;
- › PC;
- › instruction manual.

Options:

- › option simultaneous measurements of velocity and temperature;
- › traverse system.

Questions? Contact us:
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