

## Details of CARE Facility

**Name of CARE facility:** 2-D PIV

**Location:** Fluid Mechanics Laboratory, Northern Laboratory, RN: 301, Mechanical Engg.

**Total cost of equipment/facility:** 42 Lakhs

**Year of CARE funding:** 2001-02

**Support provided by CARE:** 25 Lakhs (Rest support from DST Project)

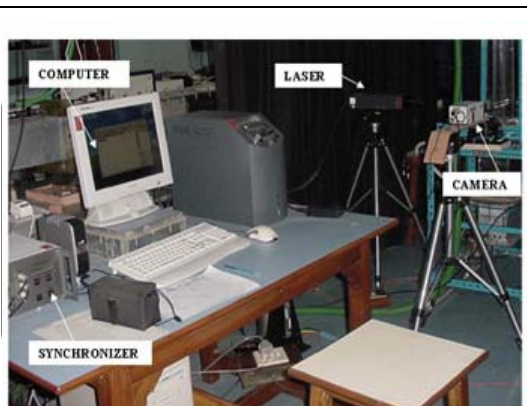
**Name of Principal Investigator:** Dr. P. K. Panigrahi (E-Mail:[panig](mailto:panig); Tel: 7686)

**Participating departments:** ME

**Brief description and capability of CARE facility:**

**(Please add a photograph of the facility)**

2C-PIV is an optical technique which measures the velocity field in a plane. The flow field is seeded with tracer particles. A pulse laser with combination of cylindrical and spherical lens illuminates a plane with a laser sheet. The pulse separation is about nano-second which is adjusted depending on the magnitude of velocity measured. The laser is synchronized with a camera for acquisition of the image at same time instant. The cross correlation between two consecutive images provides the displacement of particles and the velocity. The 2C-PIV has been updated to stereo-PIV (3C-PIV) from support by Naval Research Board for measurement of all three components of velocity.



### Technical Specifications:

**Laser:** Nd:YAG , New Wave

**Laser Power:** 15 mJ/pulse

**Camera:** PCO Sencicam 1280 X 1024 pixel

**Synchroniser:** Oxford Lasers

**PIV Processing:** Vid PIV

### Utilization of the facility:

**External Project funding:**

Naval Research Board: 34 lakhs

BARC, BRNS: 14 lakhs

**Thesis Completed:**

Ph.D.: One

M.Tech.: One

**Mechanism of time sharing:** Only projects of mutual interest with clear objectives and schedule are carried out with mutual understanding.

**Charging mechanisms:** Not Applicable

**Any difficulties, that you faced in running CARE facility:** No.

The facility is successful in attracting external research funding to supplement the running of the facility.

**Link to the website for the CARE facility, if any:** NA