

# *ticinotransfer*

*rete per il trasferimento di tecnologia*

## TECHNOLOGY OFFER

### Keywords

- Process control and logistics
- Sensors/Multisensor Technology, Instrumentation
- Micro- and Nanotechnology related to Biological sciences
- Detection and Analysis methods
- Optical Technology related to measurements

### Patent status

No patent, secrecy

### Licensing/collaboration

- License Agreement
- Testing of new applications
- Adaptation to specific needs
- Assembly
- Engineering
- Technical consultancy

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### Optical sensor for micro-bubbles, droplets and particles detection for on-line process control applications

A Swiss company has developed an optical sensor for precise detection of gas bubbles in transparent liquids, solid particles in semitransparent fluids or liquid droplets in emulsion. The technology allows real-time measurement of ultra-small bubbles, droplets or solid particles flowing at high speed for on-line process control. The company is looking for industrial partners interested in licensing the technology, technical cooperation or commercial agreement with technical assistance.

The optical sensor technology applied is based on light intensity modulation measurement resulting from the shadow-effect of flowing gas bubbles or particles in transparent fluids. The technology allows the detection of gas bubbles or particles down to 20 microns in diameter flowing at speed up to 1 m/s.

Originally, the bubble detector has been designed to detect the presence of gas and slugs in the drinking water and liquid oxygen generators. Currently, the technology is licensed to the NASA which is using the detectors in space shuttle and for the International Space Station. As the sensor can also detect micro-particles in suspension or liquid droplets dispersed in another liquid, or any micro-bubbles in liquids as soon as a difference of refractive index occurs, the company is looking for other industrial partners. The technology can be applied in industrial fluid dispensing, autoclave medical equipment, particles detection in motor oil, food and beverage process control, medical fluid monitoring instrumentation, chemical industry and others where the detection and the control of number and size of bubbles, droplets or particles is an important issue.

The company is specialised in designing and manufacturing high performance optical sensors and measuring systems for various industrial applications, in particular for the quality control of fine wires and filaments.

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