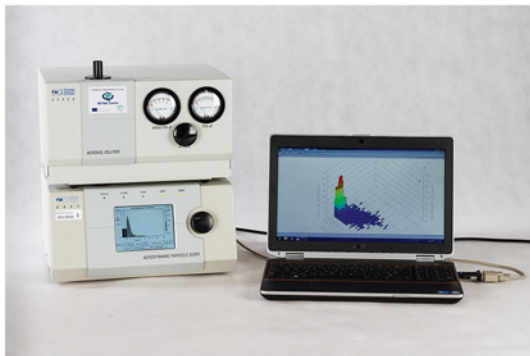


Other laboratory features include generation of liquid and solid aerosols sizing between 0.1 and 10 μm at concentrations up to 10^6 cm^{-3} , measurement of particle motion, size, concentration and their morphology. The department know-how of complex biological models production is covered by a patent.

WE OFFER

- preparation of both liquid and solid spherical, porous and fibrous particles
- measurement of aerosol size and concentration with various methods
- particle morphology assessment by optical microscopy
- research into two-phase mixture air-aerosol flow in either free space or complex models with the use of up-to-date optical methods, option of oscillatory flow generation
- aerosol deposition measurement in models by means of various methods



FOREIGN COOPERATION

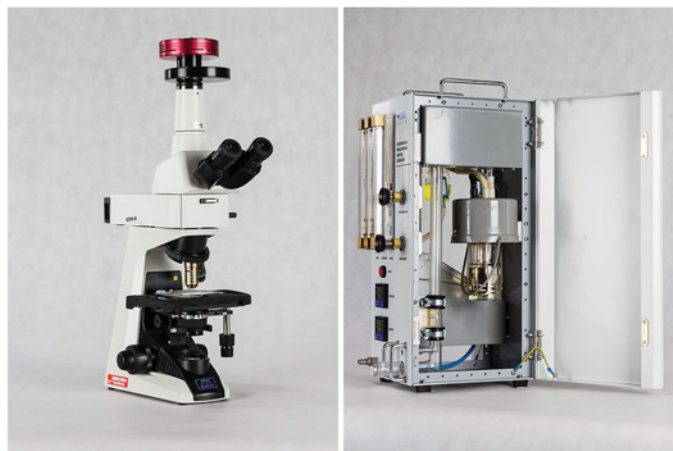
- Clarkson University, Potsdam, USA (prof. P. Hopke) – research into fibrous particles deposition
- University of California at Davis, USA (prof. A. Wexler) research into submicron particles deposition
- Ecole Centrale Marseille, CNRS, IRPHE, Marseille, France (O. Boiron, Ph.D., HDR) – research of flow dynamics in human upper airways

Aerosol research laboratory

The department systematically and at the state-of-the-art level builds up facilities for experimental research into aerosol transport and deposition. It is equipped with up-to-date instrumentation for preparation and experimental research of liquid and solid particles. The research activities conducted currently at the laboratory include elucidation of transport of various type particles as well as assessment of their deposition during inhalation into human airways. The laboratory fundamental component is a test rig for aerosol preparation, its mixing with air and measurement of flow operating parameters.



- Model of human airways for research on deposition



LABORATORY EQUIPMENT

- condensation monodisperse aerosol generator TSI – CMAG 3475 with a process aerosol monitor TSI – PAM 3375A and electrical charge neutralizer that utilizes the inert gas ^{85}Kr
- computer controlled generator of oscillatory flow for simulation of respiration
- aerodynamic particle spectrometer TSI – APS 3321 and particle counter Lighthouse Solair 3100
- aerosol dilutors TSI 3302A and Topas DIL 554
- Nikon Eclipse E200 phase contrast microscope along with Atik 320E camera
- 2D phase Doppler analyser by Dantec Dynamics
- flowmeters of low pressure drop and fast response for measurement of oscillatory flow, pressure transducers etc.

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