

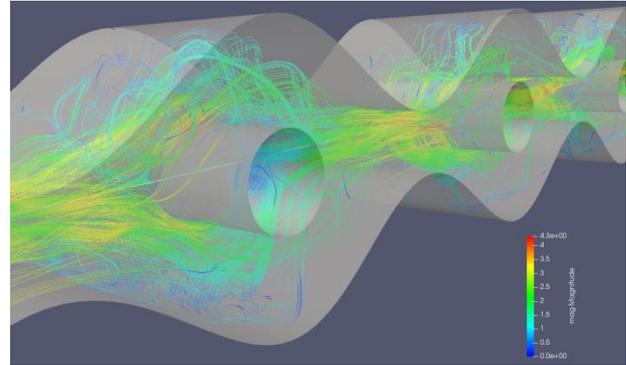
Doors open days of the Institute of Hydrodynamics

November 7 and 8, 2018, 1-5 PM

Excursions:

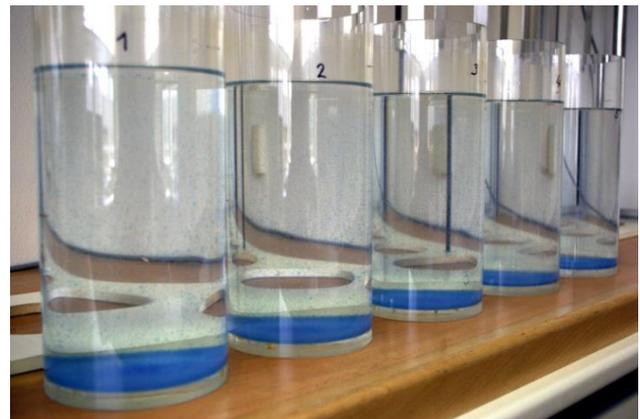
In/visible flow

A fluid flow – its relations and demonstrations can be seen everywhere around us but also inside us. It is not only an efflux from the water tap, water flow in the river or in various pipes in the industrial production. The flow significantly influences other mechanisms, such as heat or mass transfer, and thus the basic manifestation of life. Visualisations of different in/visible types of flow will be a part of the excursion.



How can water become potable?

Would you like to know, whether we have enough safe drinking water and what problems the water treatment plants have to solve? What is needed to enable people to fill a glass of safe drinking water in their homes? We explain all of these with the use of our water treatment model. In our laboratories, we will acquaint you with the drinking water treatment methods and technology today and in the past, and show you different ways of removal of undesirable impurities, such as algal or cyanobacterial organic matter, pesticides, microplastics or drugs and hormones.



Drought and floods – current extremes

The number of natural events such as drought on one hand and flash flood on the other hand is nowadays increasing. Research (monitoring and modelling) of rainfall-runoff processes which generate such events is the main topic of the Hydrological research group. We will introduce the local flood warning system developed at our Institute. One part of this system is an automatic weather station which you can see here in operation. Youngest visitors can try projecting flood control measures on the floodplain simulation model.



Not all substances flow in the same way

Asphalt or honey flows slowly and lazily, ketchup or dressings can surprise us unpleasantly, the water flow we take as a standard. With liquid soaps, body cream or sunscreen, we are quite picky and poor fluidity is annoying. We will show you why the mentioned substances behave so differently and whether we can improve their flow properties significantly. We will see what a magnetic or electric field does with the material, and finally we will examine the nanofibers using the scanning electron microscope.



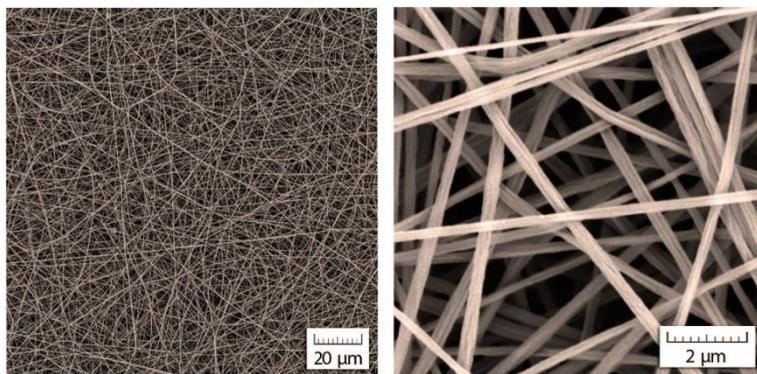
Lecture:

History of nanofibers

Both days at **2:00 PM**

Speaker: [Ing. Petra Peer, Ph.D.](#)

The lack of natural fibers has been the starting point for the emergence of the first synthetic fibers and the production of fibers from regenerated cellulose called "rayon fibers" began at the end of the 19th century. Today, nanofibers (fibers with a diameter of less than 500 nm) can be prepared by electrospinning from the same material. The nanofiber layer can be used not only in the textile industry, but also in the production of replacement organs. The lecture will focus on the historical overview of nanofibers and will be completed by images from the scanning electron microscope.



The organization of DOD is arranged by: [Lenka Pivokonská](#), [Irena Zíková](#)

A reservation is needed for larger groups (RNDr. Lenka Pivokonska, Ph.D., +420 233 109 002, pivokonska@ih.cas.cz), individuals needn't to make an appointment. The excursions will start at 1:00 PM and continue at half hour intervals.