

## Experimental device

Based on results obtained from simulations, was designed and is under development in collaboration with waste incinerator Pro Air Clean Timisoara and Faculty of Physics, University of Bucharest, the beta version of a laboratory experimental device for retaining of nanometric particles from combustion gases in non-uniform electric fields. The lower and upper parts scheme of microfluidic separation device is shown in figure 1a) and Gerber diagram corresponding ( the layout made at micrometric scale), necessary for the accomplishment the experimental device by metal evaporation and vacuum deposition on insulating plate, realized at the University of Offenburg Germany, in figure 1b).

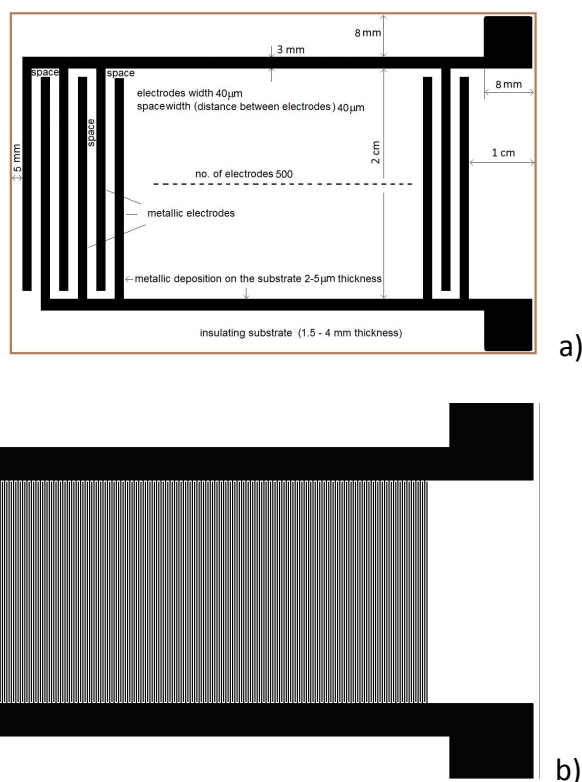


Figure 1: The lower and upper parts scheme of microfluidic separation device a), Gerber diagram representing the layout at micrometric scale b).

From a practical viewpoint, were performed with the help of the team led by dl. Prof. Dr. Stefan Antohe from the Faculty of Physics, University of Bucharest subassemblies of the experimental device, having electrodes made of Cu with a purity of 99.99% deposited in vacuum on the Fisher glass plates under different geometries (interdigitated and simple), shown in figure 2.

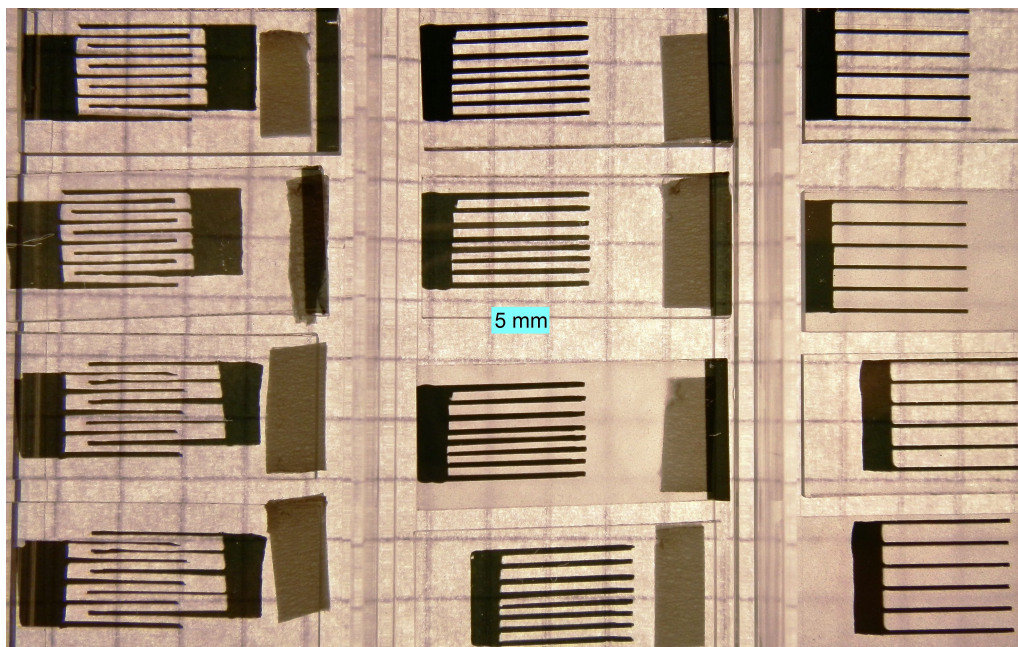


Figure 2: Various subassemblies of the experimental device, for captured of nanoparticles from combustion gases - electrodes the Cu with purity of 99.99% deposited in vacuum on the Fisher glass plates.