

European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

3rd International Workshop *EuNetAir* on

New Trends and Challenges for Air Quality Control

University of Latvia - Faculty of Geography and Earth Sciences

Riga, Latvia, 26 - 27 March 2015

MICRO/NANOMECHANICAL ELEMENTS STUDIED BY LASER PHOTOACOUSTIC SPECTROSCOPY FOR THE DEVELOPMENT OF NEW SENSING TECHNOLOGIES

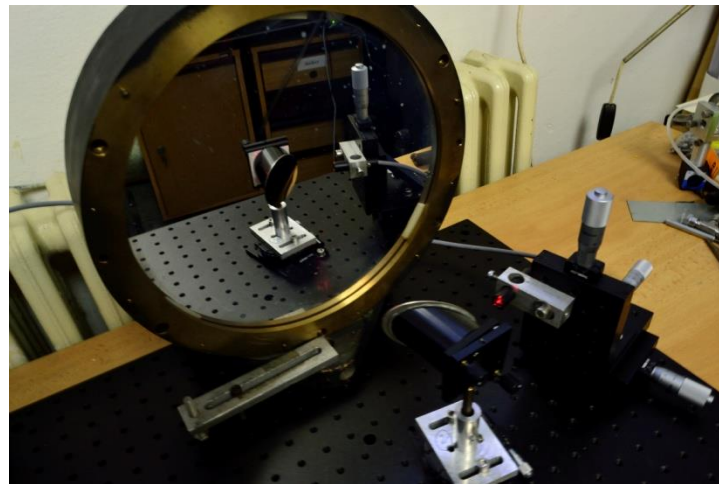
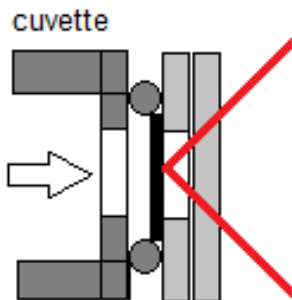
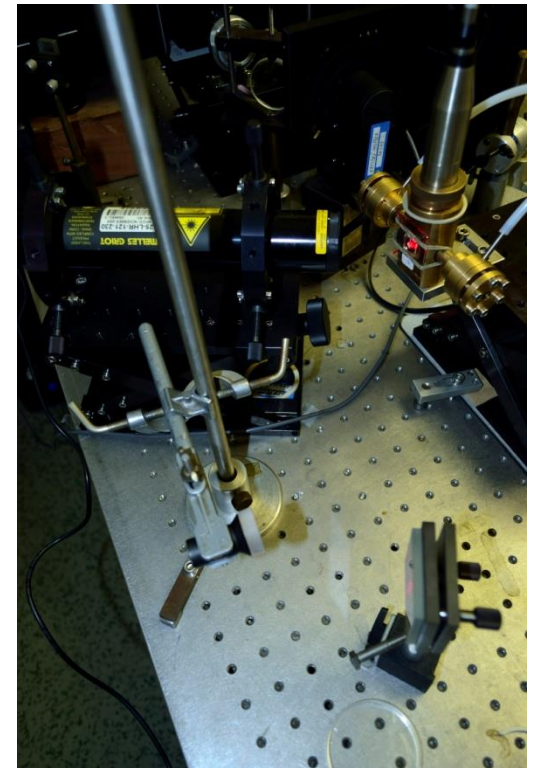
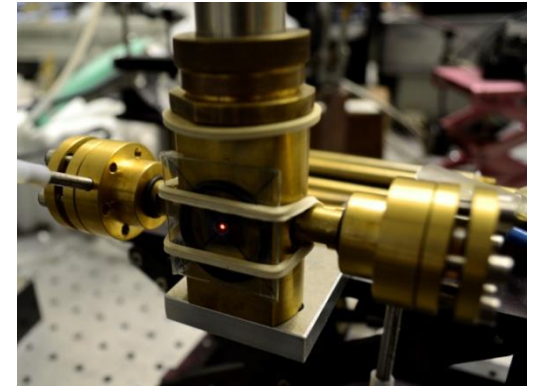
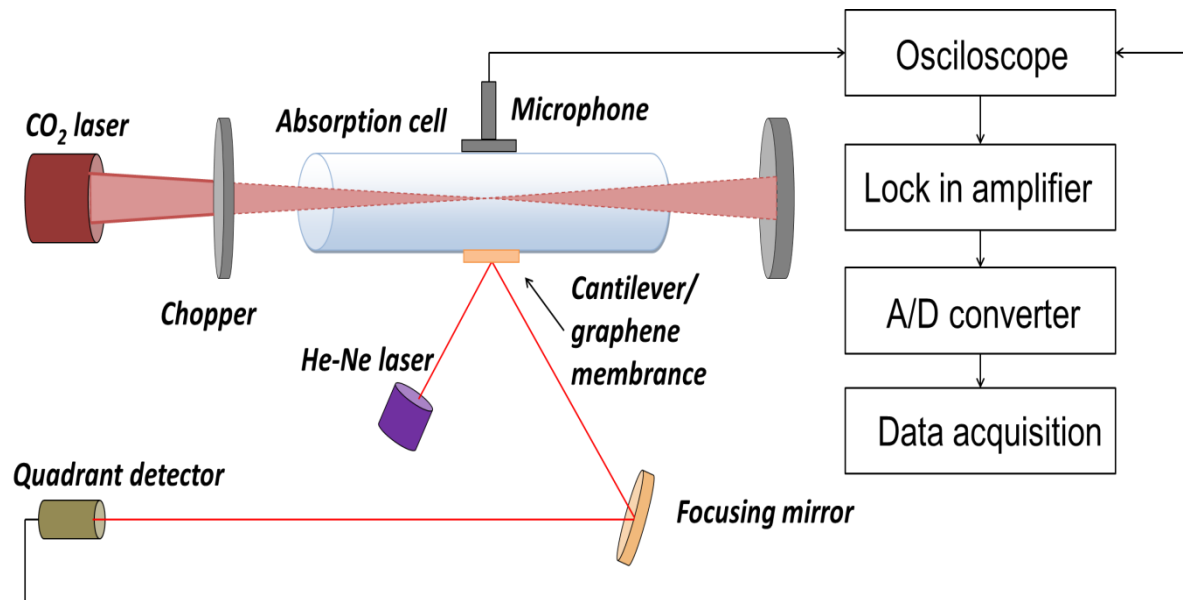


Jan Suchánek

WG Member / jan.suchanek@jh-inst.cas.cz

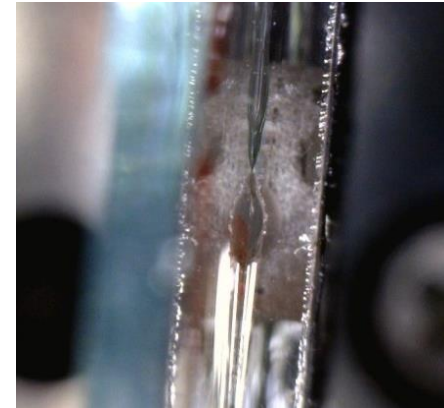
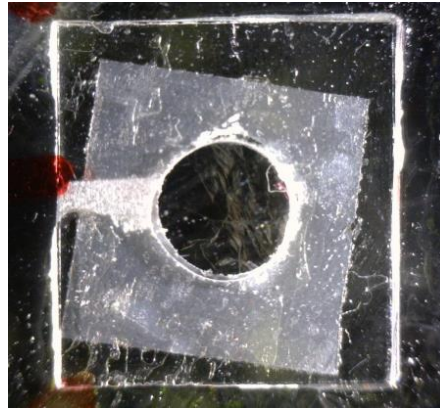
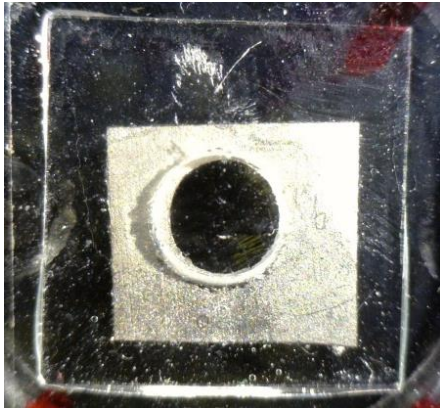
**J. Heyrovský Institute of Physical Chemistry, v.v.i.,
Academy of Sciences of the Czech Republic, Prague**

Experimental setup



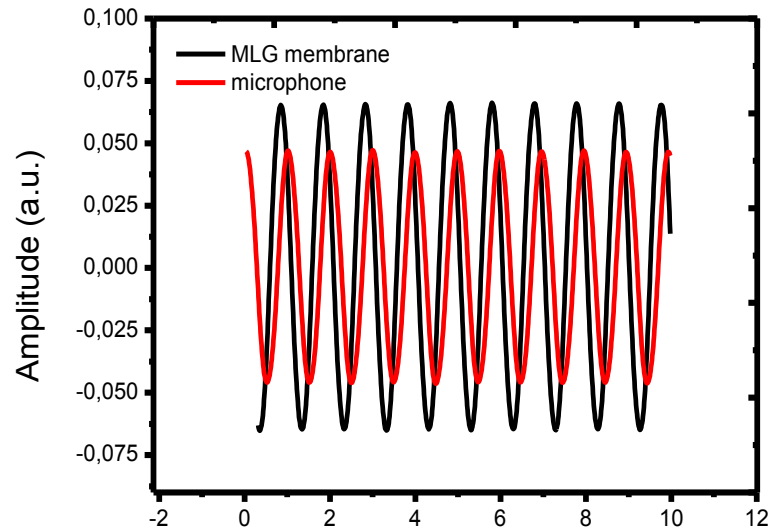
Micro/Nanomechanical elements

- Multi-Layer Graphene (MLG membranes)

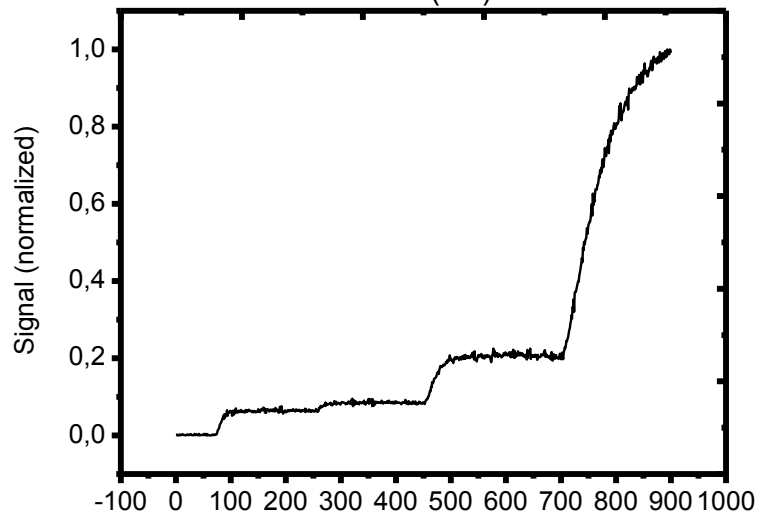


10 mm

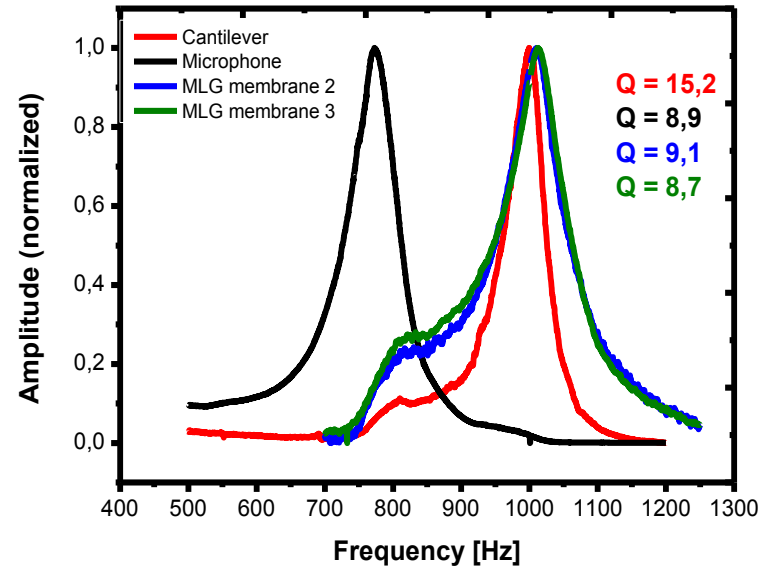
Results



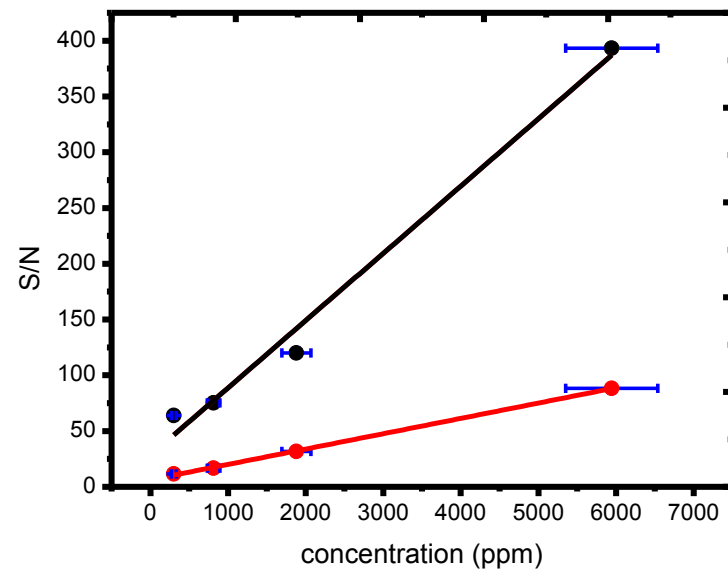
Time (ms)



Time (s)



Frequency [Hz]



Conclusions

- The new membranes have better sensitivity due to lower stiffness
- Platinum metallized (~70 nm) membrane has not shown better sensitivity than the plain membrane
- The influence of balancing channel was negligible

Future work:

- Samples with better reflectivity (different metallization)
- Samples with different geometries



Thank you for your kind attention!

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