



**Scientific report for the COST training school, joint with PolyNano summer school**

**COST Action MP 1205:**

**Advances in Optofluidics:  
Integration of Optical Control and Photonics with  
Microfluidics**

**Technical University of Denmark, Denmark**

**August 18<sup>th</sup> – 29<sup>th</sup>, 2014**



The first training school of the COST Action MP1205, **Bringing lab-on-chip systems closer to the market**, was held successfully at Technical University of Denmark from the 18<sup>th</sup> to 29<sup>th</sup> of August 2014, with a total number of participating COST students of 13. The students were trained by 2 external COST participants and 6 local COST member lecturers and trainers for the practical exercises. The school was arranged jointly with the Danish PolyNano network, implying that for all lectures, workshops and social events, the number of students was 25, and COST lecturers/trainers were supplemented by 5 speakers related to the PolyNano network, as well as local clean-room personnel. Two workshops with focus on presentation of research work, in oral and in writing, were also part of the school.

The learning objectives of the summer school were as follows:

- Describe the difference between rapid prototyping and production of LOCs.
- Describe examples of fabrication technologies for prototyping and production.
- Discuss the challenges linked to both worlds.
- Describe chip fabrication, injection molding and nano-imprinting as well as detection and/or optical manipulation techniques.
- Perform electrochemical measurements or optical manipulation.
- Submit a paper composed as if it was written for a peer reviewed journal.

For the practical work, the students were split in smaller groups; COST students in three groups of 3 students and one group of 4. The COST students constructed a lab-on-chip device for optical manipulation in a microfluidic channel; PolyNano students constructed a lab-on-chip device for electrochemical measurements. In the second week, experiments and data analysis was carried out in the lab-on-chip devices constructed by the students.

The final program of the school is included.

Average grades given by students in the student evaluation of the summer school (24 of 25 student responded; grade-scheme: 1 is poor, 5 is excellent):

Good teaching:	4.57/5
Clear goals and standards:	3.96/5
Appropriate workload:	3.44/5
Contribution to enhancement of skills:	4/5
Motivation:	4.55/5
Usefulness of IT:	4/5



Photographs:



Group photo

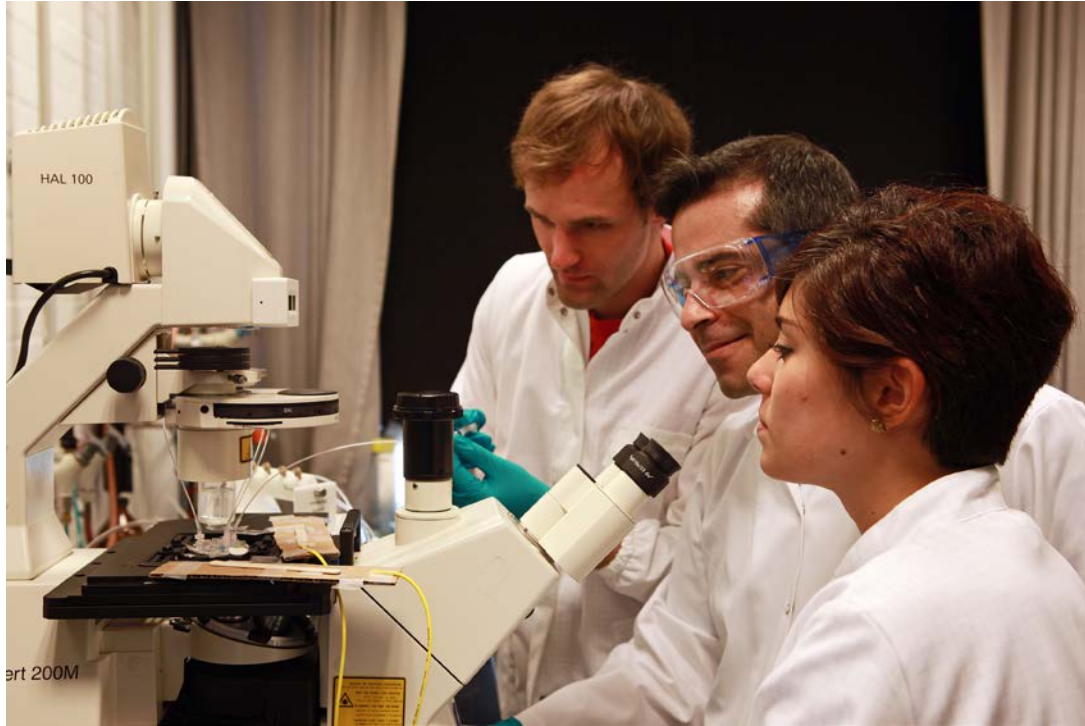


Optofluidic lab-on-chip device mounted in the microscope.





# COST



Groups of COST students working with the optofluidic lab-on-chip device



COST is supported by the EU Framework Programme



ESF provides the COST Office through a European Commission contract

Group of COST students working with one of the trainers on the data analysis:

