



PolyNano@DTU

Summer School 14 August - 1 September 2017



Week 1 - August 14-18		Monday Aug 14	Tuesday Aug 15	Wednesday Aug 16	Thursday Aug 17	Friday Aug 18
Morning: room 344/105	09.00-12.00	Welcome: Introduction & practical issues (group division for clean room exercise). 09-09.30 Start up stories: (1) BlueSense Diagnostics, DK (F. Bosco). 09.30-10.15 (2)NIL (Theodor) 10.15-11.00	Invited talk 1: Point of care blood gas analyzer (Frank Nielsen, Radiometer). 9-10.09.30 Lecture 2: Introduction to downscaling and microfluidics (Rodolph Marie) 10-11 Lecture 3: Introduction to microfabrication. 11-12, Anders Jørgensen, Danchip	Lecture 5: Interfacing issues - Electroanalytical Lab-on-a-chip devices (Arto Heiskanen) 9-10 Invited talk 2: Photonics-enhanced polymer optofluidic chips: from high-tech prototyping platform to applications (Heidi Ottevaere, Free University of Brussels, COST MP1205 lecturer) 10-11 Lecture 6: Optical manipulation of biomolecules and cells (Kirstine Berg-Sørensen). 13-14	Lecture 9: Manipulation by light and sound in microfluidic systems (Kirstine Berg-Sørensen) 9-10 Lecture 10: DNA nanofluidics part 1 (Rodolphe Marie) 10-11 Lecture 11: DNA nanofluidics part 2 (Rodolphe Marie) 11-12	Lecture 12: Introduction to chip fabrication and applications (three parallel session) 8.30-10.30. How to write a journal article: Jenny Emneus 10.30-12.00
	12.00-13.00	Lunch	Lunch	Lunch	Lunch	Lunch
Afternoon: room 344/105	13.00-18.00	Lecture 1: Overview of fast prototyping and industrial production of LOC systems (Jenny Emnéus) 10-11. Poster session: presentation of students own research projects. 15-17 Room 344/105 Welcome party-BBQ 17-?	Lecture 4: Introduction to microfabrication. 13-15, Anders Jørgensen, Danchip Demonstration: micro-milling and laser ablation. (Arto Heiskanen) 15-18.	Lecture 7: Electrochemical bioanalysis using Lab-on-a-chip devices I (Arto Heiskanen) 13-14 Lecture 8: Electrochemical bioanalysis using Lab-on-a-chip devices II (Arto Heiskanen) 14-15 3D printing workshop (Arto Heiskanen, Marianna Volino) 15-18	Clean-room safety course 13-14 (Majken Becker, Danchip) 3D printing workshop (Arto Heiskanen) 15-18	Introduction to practical issues of the clean-room work (Anders Jørgensen, Danchip). 14.00-15.30 Social event: Dinner at amusement park Bakken. The bus will depart at 16.00 from Ørstedes Plads in front of DTU Nanotech. Dinner at Restaurant Skovly at 18.00
Week 2 - August 21-25		Monday Aug 21	Tuesday Aug 22	Wednesday Aug 23	Thursday Aug 24	Friday Aug 25
Morning: room 344/105	08.30-12.00	Lecture 13: Introduction to Metrology on the micro- and nanoscale (Guido Tosello-DTU-MEK) 8.30-9.30 - Invited lecture 4: Anthony Turnes invited talk here (together with Anja Bolsens summer school): 10.30-12.30 Lecture hall Auditorium Skylab in building 373A.	Lecture 14: Introduction to polymer injection molding, including how to make shims (Claus Højgård Nielsen, Danchip) 8.30-9.30 Clean room work	Lecture 15: Introduction bonding (Anders Wolff) 8.30-9.30. Lab exercise on bonding (Esben Poulsen) 9.30-11. Lecture 16: Introduction to embossing and imprinting (Anders Kristensen) 11-12	Introduction to labs (three parallel session).	Lab
		12.00-13.00	Lunch	Lunch	Lunch	Lunch
Afternoon: room 344/105	13.00-18.00	Clean room work 4	Clean room work	Clean room exercise on NIL. 13-16 Class-room exercises on NIL, Anders Kristensen. 16-17	Lab Social event: Wallmanns. Bus pick up at 16:30 in Ørstedes Plads in front of DTU Nanotech.	Lab
Week 3 - August 28-September 1		Monday Aug 28	Tuesday Aug 29	Wednesday Aug 30	Thursday Aug 31	Friday Sept 1
Morning: room 344/105	08.00-12.00	Lab	Lab	Presentation workshop	Preparation report and presentation	Presentations
		12.00-13.00	Lunch	Lunch	Lunch	Lunch
Afternoon: room 344/105	13.00-18.00	Lab	Lab	Preparation report and presentation	Preparation report and presentation	Social event: Lunch at restaurant Riz Raz in Copenhagen. Bus pick up at 12 in Ørstedes Plads in front of DTU Nanotech
				Feedback from trainers	Feedback from trainers	Course evaluation