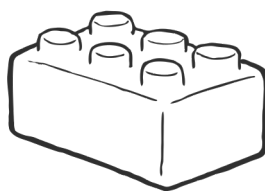


# Functional DNA Nanotechnology

Rome 19-20 June 2014



## Workshop program 19th June

### 9:30-10:00 Registration

**10:15 Opening – Prof. Giuseppe Palleschi**, president of the Analytical Chemistry Division of the Italian Chemical Society

### 10:30-12:30 Session #1 - Chair: Ido Bachelet

- 10:30-11:10 Kevin W. Plaxco** (University of California, Santa Barbara) Stealing nature's tricks to build better biosensors
- 11:10-11:50 Michael Famulok** (Bonn University) Nanostructures based on interlocked DNA architectures
- 11:50-12:10 Matteo Castronovo** (University of Udine) RNase H Self-Assembly Enables RNA Storage and Digital AFM Detection on a Highly Dense DNA Nanomatrix
- 12:10-12:30 Leila Motiei** (Weizmann Institute) Targeted Protein Surface Sensors as a Tool for Analyzing Small Populations of Proteins in Biological Mixtures

### 12:30-14:00 Lunch

### 14:00-15:00 Session #2 - Chair: Shawn Douglas

- 14:00-14:20 Björn Högberg** (Karolinska Institute) Spatial Control of Membrane Receptor Function using DNA-Origami Ligand Nano-Calipers
- 14:20-14:40 Christoph Wälti** (University of Leeds) Introducing functionality site-specifically into DNA nanomaterials
- 14:40-15:00 Alessandro Porchetta** (University of Rome, Tor Vergata) Using triplex DNA to achieve pH-control over DNA-based sensors, aptamers and complex reactions

### 15:00-15:40 Session #3 - Chair: Tambet Teesalu

Poster Flash Presentation (5 minutes each)

### 15:40-16:50 Coffee Break + Poster session

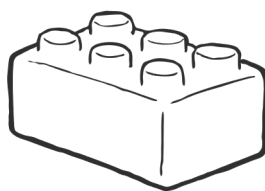
### 16:50-18:30 Session #4 - Chair: Tim Liedl

- 16:50-17:30 Shawn Douglas** (University of California, San Francisco) Nanoscale Construction with DNA
- 17:30-17:50 Alessandro Desideri** (University of Rome, Tor Vergata) A truncated DNA octahedral cage and geometrical variations to control proteins trapping and release
- 17:50-18:10 Aleksei Aksimentiev** (University of Illinois at Urbana-Champaign) Predicting the Transport Properties of DNA Origami Objects through All-Atom Molecular Dynamics Simulations
- 18:10-18:30 Piero Morales** (ENEA Research Center) Self-assembly of DNA origamis on inorganic nanodots

### 20:30/21:00 Social Dinner

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## Workshop program 20th June

### **9:15-10:35 Session #5 - Chair: Kevin W. Plaxco**

**9:15-9:55 Ebbe Sloth Andersen** (Aarhus University) DNA and RNA origami design

**9:55-10:15 Cosimo Ducani** (Karolinska Institute) Enzymatic production of 'monoclonal stoichiometric' single stranded DNA oligonucleotides

**10:15-10:35 Luca Piantanida** (IOM-CNR) Monitoring DNA origami actuation with a plasmon ruler

### **10:35-11:00 Session #6 - Chair: Giuseppe Palleschi**

Poster Flash Presentation (5 minutes each)

### **11:00-12:00 Coffee Break + poster**

### **12:00-13:20 Session #7 - Chair: Ebbe Sloth Andersen**

**12:00-12:40 Tambat Teesalu** (Sanford-Burnham Medical Research Institute) Tumor penetrating peptides

**12:40-13:00 Sara Tombelli** (CNR) Molecular beacons and PMMA nanoparticles for the detection and silencing of mRNA in human cancer cells

**13:00-13:20 Mette D.E. Jepsen** (Aarhus University) Constructing fuzzy and Boolean logic gates in DNA

### **13:20-15:20 Lunch**

### **15:20-16:50 Session #8 - Chair: Francesco Ricci**

**15:20-15:40 Giampaolo Zuccheri** (University of Bologna) DNA Nanostructures assembly and potential use as intracellular biosensors in single live human cells

**15:40-16:00 Nicola Borbone** (University of Naples) Anti HIV activity of monomolecular tetra-end-linked analogues of the SA-1042 aptamer targeted against the viral envelope glycoprotein gp120

**16:00-16:20 Christopher O'Kane** (Ulster University) Enhanced Intrinsic Fluorescence of Rationally Designed G-wire Assemblies

**16:20-16:40 Giuseppe Arrabito** (Dortmund University) Multiplexed Sub-Cellular Scale Microarrays from direct DNA Nanolithography

### **16:40 Closing remarks**