



University
of Basel

Department of
Biomedical Engineering



Selected research topics in Biomedical Engineering:

The Future of Personalized Medicine: 3D Printing and Patient-Specific Technologies

Location: Biozentrum, Spitalstrasse 41, Basel, Seminar Room U1.191

Date & Time: Tuesday 05.03.2024 11:15 – 13:00

Bioengineering Near-infrared Nanotube Sensors for Biomedical Applications

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Abstract

Single-walled carbon nanotubes (SWCNTs) emit near-infrared fluorescence that is ideal for optical biomedical sensing. However, the inability to control and predict their fluorescence response in the presence of different analytes limits their applications in complex biological environments. We discuss recent advancements inspired by synthetic biology, such as directed evolution, xeno nucleic acid engineering, and protein mutagenesis, to control the optical properties of these synthetic nanoparticle sensors for a range of applications.

Biosketch

Ardemis Boghossian earned her B.S.E. in Chemical Engineering from the University of Michigan. She obtained her Ph.D. on carbon nanotubes under the supervision of Michael S. Strano at the Massachusetts Institute of Technology (MIT) before starting her postdoc on bioengineering in the laboratory of Frances H. Arnold at the California Institute of Technology (Caltech). She is currently an Assistant Professor at the Ecole Polytechnique Fédérale de Lausanne (EPFL), where she conducts research as the Principal Investigator (PI) of the Laboratory of NanoBiotechnology (LNB).