

ICFO COLLOQUIUM FIORENZO OMENETTO 'Biomaterials Transformation for Technological Applications'

FIORENZO OMENETTO

April 28, 2017

Friday, April 28, 12:00, ICFO Auditori

FIORENZO OMENETTO

Tufts University;

Associate Dean for Research, School of Engineering;

Professor, Department of Biomedical Engineering

$$

Fiorenzo G. Omenetto is the Frank C. Doble Professor of Engineering, and a Professor of Biomedical Engineering at Tufts University. He also holds appointments in the Department of Physics and the Department of Electrical Engineering. His research interests are in the convergence of technology, biologically inspired materials and the natural sciences with an emphasis on new transformative approaches for sustainable materials for high-technology applications. He also serves as Associate Dean for Research for the School of Engineering.

He has proposed and pioneered the use of silk as a material platform for advanced technology with uses in photonics, optoelectronics and nanotechnology applications, is co-inventor on several disclosures on the subject, and is actively investigating applications that rely on this technology base both for technical and design applications. He has co-founded three startups and has active roles in their governance. Prof. Omenetto was formerly a J. Robert Oppenheimer Fellow at Los Alamos National Laboratories, a Guggenheim Fellow, and is a Fellow of the Optical Society of America and of the American Physical Society. He was named one of the 50 top people in tech by Fortune magazine alongside a class including Steve Jobs, Larry Page, Mark Zuckerberg, Shigeru Miyamoto, to name a few. His research has been featured extensively in the press with coverage in the most important media outlets worldwide.

Natural materials offer new opportunities for innovation across fields that bring together the biological and technological worlds. Stringent requirements on material form and function are imposed when operating at the nanoscale or when interfacing such materials with photonics or microelectronic devices. Silk fibroin is a very attractive biopolymer for use as a polymorphic matrix for multiple material formats that are casted, printed, extruded, or molded. This opens opportunities for multi-functional, sustainable devices that leverage both the properties of the material and the biological features that they can encompass. Devices such as silk-based photonic crystals, wireless interfaces, printed conformal sensors and resorbable electronics will be described as some examples of the possibilities that this water-processed, biocompatible material offers.

Friday, April 28, 12:00, ICFO Auditorium