School of Advanced International Studies
Johns Hopkins University
1740 Massachusetts Avenue, NW
Washington, DC 20036

Day 1: Thursday, 15 September 2022

Introduction		
0915-0930	Welcome Remarks	**Dr. Sofi Bin-Salamon** Program Manager Air Force Office of Scientific Research **Dr. Khershed Cooper** Program Director National Science Foundation
Research Challenges		
0930-0950	Extracellular matrix analogues for embedding fluorescent nanodiamonds	**Prof. Luigi Ambrosio** Institute of Polymers, Composites, and Biomaterials National Research Council of Italy
0950-1010	Barriers in sensing brain cells: lessons from 2D and 3D system	**Dr. Valentina Benfenati** Institute for Organic Synthesis and Photoreactivity National Research Council of Italy **Dr. Andrea Candini** Institute for Organic Synthesis and Photoreactivity National Research Council of Italy
1010-1030	Smart nanomaterials to investigate electrical activity of excitable cells	**Dr. Annalisa Convertino** Institute of Microelectronics and Microsystems National Research Council of Italy
1030-1050	Nanodiamonds Living Systems Interface: Measure, Sense and Operate: Challenges	**Dr. Roberto Zamboni** Institute for Organic Synthesis and Photoreactivity National Research Council of Italy
1050-1110	**BREAK**	
1110-1130	Nano-manufacturing of Diamond Crystals Containing Nitrogen-Vacancy Centers for Quantum Electronics and Biosensing	**Prof. Raj N. Singh** Department of Materials Science and Engineering Oklahoma State University

1130-1150	New strategies for synthesis and characterization of doped nanodiamonds	**Prof. Mohan Sankaran** Department of Nuclear, Plasma and Radiological Engineering University of Illinois-Urbana Champaign
1150-1230	Confined laser shock detonation for NV nanodiamonds manufacturing: challenges	**Prof. Qiong Nian** Department of Engineering of Matter, Transport and Energy Arizona State University **Prof. Yiliang (Leon) Liao** Department of Industrial & Manufacturing Systems Engineering Iowa State University
1230-1330	**LUNCH**	
1330-1350	Fluorescent nanodiamond for quantum imaging: challenges	**Prof. Andrew Greentree** ARC Centre of Excellence for NanoBiophotonics Royal Melbourne Institute of Technology University
1350-1410	Quantum sensors of mitochondrial metabolism: Challenges and opportunities	**Prof. Peter Burke** Department of Electrical Engineering and Computer Science University of California, Irvine
1410-1430	Engineering nanodiamonds for superior sensing performance and future scalability	**Prof. Philip Hemmer** Department of Electrical and Computer Engineering Texas A&M University
1430-1450	Engineering point defect distribution and surface reconstructions at non-equilibrium conditions	**Prof. Peter Pauzauskie** Department of Materials Science and Engineering Washington University
1450-1510	**BREAK**	
1510-1530	Light-modulation of biological/semiconductor interfaces for affecting cell growth and artificial retina development	**Prof. Thomas Brown** Centre for Hybrid and Organic Solar Energy University of Rome, Tor Vergata
1530-1550	High-tech ceramics and composites for harsh environments	**Dr. Diletta Sciti** Institute of Science and Technology for Ceramics National Research Council of Italy
1550-1610	Assembling and characterization of carbon nano-composites	**Dr. Vincenzo Palermo** Institute for Organic Synthesis and Photoreactivity National Research Council of Italy
1610-1630	Smart sensing non-classical biology	**Dr. Larry Nagahara** Whiting School of Engineering Johns Hopkins University

1630-1650	Avenues for International Collaboration	**Mr. Giulio Busulini** Institute for Organic Synthesis and Photoreactivity National Research Council of Italy **Prof. Marco Gilli** Science Counselor Embassy of Italy
1650-1730	**Closing Discussion**	
1730	**MEETING ADJOURNED**	

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Day 2: Friday, 16 September 2022

Scientific Opportunities		
0915-1015	Opportunities in Biophysics	
1015-1045	**BREAK**	
1045-1145	Opportunities in Nanomanufacturing	
1145-1200	Closing Remarks	**Dr. Sofi Bin-Salamon** Program Manager Air Force Office of Scientific Research **Dr. Khershed Cooper** Program Director National Science Foundation
1200	**CONCLUSION**	