

ETTORE MAJORANA FOUNDATION  
AND CENTRE FOR SCIENTIFIC CULTURE

INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS

74th Course/Workshop: **EPIOPTICS-15, SILICENE-3**

ERICE SICILY 14-20 July 2018



## SCIENTIFIC PROGRAM

### Saturday July 14

19:30-21:30 *Dinner*

21.30 Get together at Marsala Room in I.I. Rabi Institute (San Rocco)

### Sunday July 15 Lecture Hall Eugene P. Wigner Institute (San Francesco)

09:00-09.20 A. Cricenti, D. Narducci G. Benedek Opening of the school: Welcome in Erice

Chairman: A. Cricenti

09.20-10.10 D. Aspnes History and Future of Epioptics Probes

10.10-11.00 N. Tolk Depth-Dependent Studies of Electron and Phonon Ultrafast Dynamics in Femtosecond Laser Induced Transient States of Matter (1)

11:00-11:30 *Group photograph & Coffee break*

11.30-12.20 F. Bechstedt Dirac and Weyl fermions in optical properties

12.20-12.50 K. Pedersen Nanoscale materials for solar absorbers and thermal emitters

*Lunch*

Chairman: N. Tolk

16.30-17.20 S. Eisebitt Femtosecond X-ray Sources: Principles and Applications

17.20-18.10 H. Brune Single Atom Magnets at Surfaces – State-of-the-art and Future Perspectives

18:10-18:40 *Coffee break*

18.40-19.30 T. Madeira Analysis of samples from Art and Cultural Heritage

*Dinner*

### Monday July 16

Chairman : D. Zahn

- 09:00-09.50 H. Wang Molecular Anisotropy at Air/Solid and Solid/Liquid Interfaces with Sum-Frequency Generation Vibrational Spectroscopy
- 09.50-10.40 N. Tolk Depth-Dependent Studies of Electron and Phonon Ultrafast Dynamics in Femtosecond Laser Induced Transient States of Matter (2)
- 10:40-11:10 *Coffee break*
- 11.10-12.00 L. Vattuone Chemistry of graphene: adsorption of CO at pristine, doped and defected supported graphene.
- 12:00-12-50 U- Wurstbauer Long-lived excitons in bilayer systems – exploring the phase diagram of composite bosons

*Lunch*

Chairman: K. Hingerl

- 16.30-17.20 C. Cobet VIS-VUV-Ellipsometry: A versatile method to study thin film and surface properties
- 17:20-18:10 P. Vogt
- 18:10-18:40 *Coffee break*
- 18:40-19:30 J. Humlicek Effective medium approach to nanostructures: strengths and weaknesses

*20:00 Dinner and concert by Marylin and Giorgio at Elimo*

## **Tuesday July 17**

Chairman : F. Bechstedt

- 09.00-09.50 O. Pulci Two-dimensional nitrides for ultraviolet to infrared detectors
- 09.50-10:40 A. Molle Xenon: a two-dimensional materials platform for nanoelectronics and more
- 10:40-11:10 *Coffee break*
- 11:10-12:00 A. Mock The physics of low symmetry metal oxides with special attention to phonons, plasmons and excitons and their potential for uses in power electronics and quantum technologies
- 12.00-12:50 T. Novikova Mueller Matrix polarimetry applied to biosamples and in cancer detection

## **14.00 Excursion**

20:00 *Dinner*

## **Wednesday July 18**

Chairman : M. Losurdo

- 09:00-09.50 R. Mikhaylovskiy Terahertz spectroscopy and control of spin dynamics (1)
- 09.50-10.40 A. Furchner Interactions of Water with 3D-Structured Surfaces and Thin Films
- 10:40-11:10 *Coffee break*
- 11.10-12.00 G. Benedek The electron-phonon interaction at deep Bi<sub>2</sub>Te<sub>3</sub>-semiconductor interfaces from Brillouin light scattering,
- 12:00-12-50 D. Zahn Strategies for Enhanced Raman Spectroscopies to Detect Small Amounts of Material

*Lunch*

Chairman: O. Pulci

- 16.30-17.20 C. Sturm Crystal optics on low-symmetry crystals
- 17:20-18:10 R. Ossikovski Phenomenological Modelling of Ellipsometry and Mueller Matrix Polarimetry Measurements: Theory and Experiment
- 18:10-18:40 *Coffee break*
- 18:40-19:30 M. Orlita Magneto-optics of relativistic-like electrons

*Dinner*

## **Thursday July 19**

Chairman : D. Aspnes

- 09.00-09.50 R. Mikhaylovskiy Terahertz spectroscopy and control of spin dynamics (2)
- 09.50-10:40 C. Faugeras Raman spectroscopy of novel 2D materials
- 10:40-11:10 *Coffe break*
- 11.10-12.00 A. Cricenti Optical nanospectroscopy for Tissue Imaging and Early Cancer Diagnostics

12:00-12:50 K. Hingerl Classical model for bulk quadrupole contributions to second harmonic generation in silicon

*Lunch*

Chairman : A. Cricenti

16.30-17.20 D. Aspnes Intelligent Processing of Spectra

17.20-17.50 Y. Cho Linear and Nonlinear Optical Properties on a few layers of  $\text{In}_2\text{Se}_3$

17.50-18.20 *coffe break*

18.20-18.50 S. Chandola Optical properties of hydrogen passivated Si(553)-Au surfaces

18:50-19:20 N. Foster Strain-induced nonlinear susceptibility  $\chi(2)$  enhancement in thin film  $\text{Ba}_{1-x}\text{Sr}_x\text{TiO}_3$  (BSTO)

19.20-19.30 Presentation of the next OSI Conference

19.30 A. Cricenti Conclusions

20.00 ***Social Dinner***

### **Friday July 20**

Departure from Erice

*Antonio Cricenti & Dario Narducci  
Directors of the Workshops*

*Giorgio Benedek  
Director of the School*

*Antonino Zichichi  
EMFSSC President*