



International School on Physics of Indirect Excitons

Ettore Majorana Center, Erice (IT) | July 26–August 1, 2014
Marie Curie ITN INDEX Summer School

TOPICS

Indirect excitons are bosonic quasi-particles in semiconductors with unique properties: they have long lifetime and spin-relaxation time, can travel over large distances before recombination, can be cooled down to low temperatures to form a quantum gas, can be controlled by voltage in-situ. Due to these properties, indirect excitons represent a model system for both the studies of fundamental properties of light and matter and the development of conceptually new excitonic devices.

Four major implementations of indirect excitons have been developed:

- (I) optically formed indirect excitons in coupled quantum wells (CQW),
- (II) electrically formed indirect excitons in CQW,
- (III) electrically formed indirect excitons in quantum Hall bilayers, and
- (IV) indirect excitons in biased microcavities with CQW in the active region.

The recent breakthroughs in the field of indirect excitons have brought us to the most interesting stage of the study of excitonic states and the development of excitonic devices.

The course will address (1) fundamental physics of cold bosons in solid state materials, (2) novel principles for optoelectronic devices, (3) new systems with indirect excitons. All the implementation of the indirect excitons will be covered by the scientific program.

INVITED LECTURERS & SPEAKERS

Lecturers

J. Baumberg
L. Butov
M. Dyakonov
L. Levitov
E. Molinari
A. Pinczuk
D. Ritchie

Speakers

K. Bolotin
F. Dubin
A. Holleitner
V. Pellegrini
L. Pfeiffer
M. Polini
M. Rontani

P. Savidis
C. Tejedor
M. Vladimirova

DIRECTORS

Leonid Butov, University California San Diego (USA)
Vittorio Pellegrini, IIT and CNR-NANO (IT)
Aron Pinczuk, Columbia University (USA)
Massimo Rontani, CNR-NANO (IT)

DEADLINE FOR APPLICATION
MAY 15 2014

<http://web.nano.cnr.it/ispie2014>
contact: luisa.neri@nano.cnr.it



ORGANIZED BY



WITH

