

**INTERNATIONAL SCHOOL AND
WORKSHOP ON ELECTRONIC
CRYSTALS
ECRYS-2022**

<http://lptms.u-psud.fr/ecrys2022/>

August 8-20, 2022

**Institute of Scientific Studies,
Cargèse, Corsica, France.**



Organizers:

S Brazovskii	Univ. Paris-Saclay/ CNRS	France
N Kirova	Univ. Paris-Saclay/ CNRS	France
S. Ravy	INP CNRS	France
E. Trizac	Univ. Paris-Saclay/ CNRS	France

Secretary:

C. Le Vaou, Univ. Paris-Saclay/ CNRS France

ECRYS 2022 will be reincarnation of the early planned ECRYS 2020 which has been cancelled because of COVID 19. It will finalize the series of tri-annual conferences ECRYS on Electronic Crystals, which have been carrying on since 1993.

The event will be held by the Institute of Scientific Studies, Cargèse, France <https://iesc.universita.corsica/>

The meeting will host about 100 participants. Each day, the program will integrate the advanced research school and the leading edge scientific conference.

The mission of ECRYS meetings is to provide cross-links between various studies of spontaneous structures formed by electrons in solids and in related systems such as mixed and spin-polarized states in superconductors, ferroelectric and magnetic domains, cold ions and spin Coulomb crystals, charged objects in soft matter and biology. Unifying concepts and phenomena emphasize a complex of nonlinear nonstationary spacio-temporal effects, role of topological defects from vortices to solitons and walls networks.

Materials: low-dimensional systems build from transition metals, oxides, chalcogenides, etc; organic conductors; artificial atomic structures; cold trapped ions; charged patterns in soft and bio-matters.

Effects: Cooperative electronic states like charge-spin- and pair density waves, charge order, electronic ferroelectrics; Peierls, Mott and excitonic insulators; formations of patterns, stripes, solitons and their lattices or networks; collective nonlinear and non-stationary effects; states switching and dynamical phase transitions; weak crystallization.

Methods: nano-scale studies and manipulations by STM, STS, and AFM; MBE- and FBI- fabricated nanostructures; high magnetic and electric fields, electrostatic doping; femto-second optical quenches and high tera-Hertz pulses; time-sliced ARPES, X-ray and electron diffraction.

Theory: mathematics of nonlinear and non-stationary processes; analytical and numerical techniques for many-body static and dynamical states.

Main axes of the Program:

- Charge order in electronic systems
- Charge density waves
- Spin density waves and stripes
- Pair density waves in superconductors
- Axionic charge density waves and Weyl-Dirac semimetals.
- Antiferromagnetism and Mott insulator
- Excitonic insulator
- Electronic ferroelectricity
- Coulomb crystals from cold ions to the spin ice
- Superconductivity versus charge orderings and charge density waves
- Local and nano-scale effects, STM
- Commutation of states by optical quench
- Hetero-structures and electrostatic doping

To appreciate the character of our meetings, please visit the website of the previous event <https://lptms.u-psud.fr/ecrys2017/>

Fees waiving are previewed for PhD and master students.

Abstract Submission:

Deadline for the abstract submission is **April 15, 2022. Extended till May 1 2022.**

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