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**T. Noh (Co-Chair), Seoul National University**  
**J. Robinson (Co-Chair), University of Cambridge**

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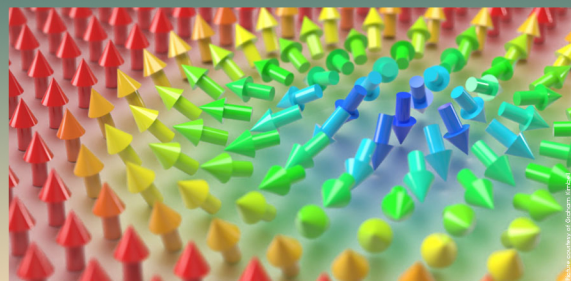
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## WORKSHOP WEBSITE

<http://oss2022.phys.unisa.it>

## SCIENTIFIC SECRETARIAT

[oss2022@unisa.it](mailto:oss2022@unisa.it)



OSS2022 is organized within the Core-to-Core Oxide SuperSpin International Network involving experimental and theoretical groups in UK, Japan, South Korea, and Italy. The aim of OSS2022 is to bring together members of the Network along with leading scientists in the field of advanced materials and interface research to discuss frontier research in the area of novel superconductivity at oxide superconductor interfaces with magnetic materials. Through a better understanding of materials processing and properties, one can envision achieving full control over superconducting symmetry at oxide interfaces and to be able to gain access to the fundamental mechanisms underlying the science of advanced oxide interfaces and unconventional superconductivity.

International Workshop  
JSPS-EPSRC-CNR/SPIN-IBS CORE-TO-CORE

# OSS2022

## Oxides Superconducting Spintronics

### Unconventional transport in superconducting & magnetic systems with spin-orbit coupling

**14 - 17 Novembre 2022**  
**Vietri sul Mare (Italy)**



DIPARTIMENTO DI FISICA  
"E.R. CAIANIELLO"



UNIVERSITÀ DEGLI STUDI  
DI SALERNO



## MONDAY, NOVEMBER 14TH

**8:45** Welcome (Jason Robinson & Directors Dep. Phys. Salerno & CNR-SPIN)

**Chair: Antonio Vecchione**

**9:00** | **Yoshiteru Maeno** | Still puzzling: unconventional superconductivity of  $Sr_2RuO_4$

**9:30** | **Aline Ramirez** | Deconstructing  $Sr_2RuO_4$ : Insights from a microscopic perspective

10:00 COFFEE BREAK

**11:00** | **Kenji Ishida** | NMR measurements on  $Sr_2RuO_4$  near upper critical field

**11:30** | **Yuri Fukaya** | Spin-susceptibility for orbital-singlet Cooper pair in the three-dimensional  $Sr_2RuO_4$  superconductor

**12:00** | **Vadym Grinenko** | TRSB superconductivity of  $Sr_2RuO_4$ : recent progress on muon spin rotation/relaxation ( $\mu$ SR) experiments under uniaxial stress

12:30 LUNCH

**Chair: Katharina Franke**

**14:30** | **Jennifer Fowlie** | Superconductivity and magnetism in infinite-layer nickelate heterostructures

**15:00** | **Maria Teresa Mercaldo** | Orbitronics effects in spin-singlet superconductors

15:30 COFFEE BREAK & POSTER VIEWING

**17:00** | **Alexander Golubov** | Testing pairing symmetry using  $s + p$ -wave superconductor junctions

**17:30** | **Elke Scheer** | Gate control of the critical current of superconducting nanowires

**18:00** | **Hisa Matsuki** | Infinite magnetoresistance in superconducting spin switch with spin-orbit coupling

## TUESDAY, NOVEMBER 15TH

**Chair: Jason Robinson**

**9:00** | **Sachio Komori** | Magnetic exchange through oxide superconductors

**9:30** | **Alex Chan** | Spin pumping long-range spin-triplet currents into superconducting Nb through Cr/Fe interfaces

10:00 COFFEE BREAK

**11:00** | **Katharina Franke** | Diode effect in Josephson junctions with a single magnetic atom

**11:30** | **Linde Olde Olthof** | Raising the  $T_c$  of  $p$ -wave superconductors through magnetic coupling with a conventional superconductor

**12:00** | **Remko Fermin** | Superconducting triplet currents generated by an effective spin-orbit coupling in a spin-textured ferromagnetic disk

12:30 LUNCH

**Chair: Yoshi Maeno**

**14:30** | **Keiji Yada** | Topological property of interorbital pairing in multi-orbital superconductors

**15:00** | **Szabolcs Csonka** | Cooper pair splitting and Andreev molecule in Superconductor - Parallel InAs nanowire hybrid

15:30 1 MINUTE POSTER PRESENTATION & COFFEE BREAK

**17:00** | **Marco Aprili** | Tunnelling process into YSR states visualized by shot-noise scanning tunnelling microscopy

**17:30** | **Yajian Hu** | Polar Kerr effect study on the time-reversal symmetry-breaking in the charge density wave of  $CsV_3Sb_5$

**18:00** | **Masatoshi Sato** | Bulk-boundary correspondence in point-gap topological phases

## WEDNESDAY, NOVEMBER 16TH

**Chair: Jennifer Fowlie**

**9:00** | **Gil-Ho Lee** | Steady Floquet-Andreev states in graphene Josephson junctions

**9:30** | **Stefano Bonetti** | Terahertz electric-field driven magnetism in  $SrTiO_3$

10:00 COFFEE BREAK

**11:00** | **Beena Kaliski** | Imaging quantum materials with scanning SQUID microscopy

**11:30** | **Teruo Ono** | Superconducting Diode Effect in Rashba Superlattice

**12:00** | **Dongwook Go** | Orbitronics: Exploiting orbital angular momentum for next-generation electronics

12:30 LUNCH

**15:00** EXCURSION

**19:00** CONFERENCE DINNER

## THURSDAY, NOVEMBER 17TH

**Chair: Changyoung Kim**

**9:00** | **Jinkwon Kim** | Superconducting Ruddlesden-Popper Oxide Thin Films with Suppressed Extended Defects

**9:30** | **Sukbum Chung** | Theory of superconductivity in doped quantum paraelectrics

10:00 COFFEE BREAK

**11:00** | **Carmine Autieri** | Competing sources of Berry curvature and charge reconstruction at the oxides interface

**11:30** | **Angelo di Bernardo** | Towards superconducting spintronics based on van-der-Waals systems

**12:00** | **Nicolas Gauquelin** | Study of the metal to insulator phase transition in  $Ca_2RuO_4$  under different stimulus

12:30 LUNCH

**Chair: Mario Cuoco**

**14:30** | **Dirk Wulferding** | Emergent nematicity and electronic scattering processes in metallic kagome superconductors

**15:00** | **Philip Hofmann** | In-operando electronic structure of quantum materials devices

15:30 COFFEE BREAK & POSTER VIEWING

**17:00** | **Angela Wittmann** | Tuning spin current injection at ferromagnet-nonmagnet interfaces by molecular design

**17:30** | **Enrico Giannini** | Isotope tuning of the superconducting dome of strontium titanate

**18:00** | **Satoshi Kashiwaya** | Point contact spectroscopy of nodal line semimetal  $CaAg_0.9Pd_0.1P$

**18:30** CLOSING REMARKS