



Istituto CNR SPIN  
SuPerconductors,  
oxides and other INnovative  
materials and devices

**ESAS**  
The European Society for  
Applied Superconductivity



**IEEE**

**CSC**  
Council on Superconductivity

## ESAS WINTER SCHOOL



# Novel frontiers in superconducting electronics: from fundamental concepts and advanced materials towards future applications

**Pozzuoli (NA) , 12-17 December 2016**

Web site: [events.isec2017.org](http://events.isec2017.org)

### LIST OF TOPICS

#### Towards energy-efficient electronics

- Big societal challenges, state-of-the-art and possible role of superconducting (SC) electronics.

#### Superconducting electronics: basic aspects

- Digital SC electronics.
- Analog SC electronics.
- Superconducting memories.

#### Interfacing superconductivity with other functional degrees of freedom

- Superconducting spintronics.
- Spin control through light: towards the integration with superconductivity.
- Semiconductor-superconductor hybrids: unconventional superconductivity and quantum topological order.
- Ferroelectricity and superconductivity: hybrid solutions.
- Coherent superconducting caloritronics.

#### Superconducting fast interconnections

- Low dimensional nanostructures, nanowires, 2D one-layer materials (e.g. graphene, silicene, etc.).
- Low dimensional superconducting electronics for fast interconnections.

### ORGANIZING COMMITTEE

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### ISEC 2017

**The ESAS Winter School is a satellite event of the biennial International Superconductive Electronics Conference ISEC 2017**

[www.isec2017.org](http://www.isec2017.org)



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