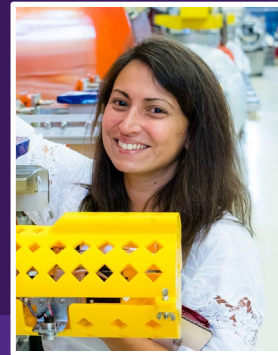


THE MATERIALS SCIENCE AND ENGINEERING DEPARTMENT FALL COLLOQUIUM
SERIES PRESENTS:

Anna Grassellino

Deputy Division Head, Applied Physics and Superconducting Technology
Division

Fermi National Accelerator Laboratory



State of the art in Superconducting Radio Frequency Technology: from accelerators to quantum

This talk will give an overview of the forefront SRF technology R&D that is being conducted at Fermilab and other laboratories. It will include the dramatic leaps in superconducting RF technology (SRF), that enable a series of highly efficient user facilities in Basic Energy Sciences, Nuclear physics, Fusion and High Energy Physics. Application of the SRF technology towards Quantum Computing and Dark sector searches will be discussed. It will be a journey into the mystery of the SRF cavities surface nanostructure, and will highlight the key role of surface and material science in the progress of superconducting accelerator technologies.

Anna Grassellino is from Marsala, Italy. She earned her Masters in electronics engineering at the University of Pisa and her Ph.D. from the University of Pennsylvania in superconductors and applied physics. Anna started as Postdoctoral researcher at Fermilab in 2012, then became Associate Scientist in 2014, Scientist in 2016, and finally Senior Scientist in 2018. Now she is the Deputy Head of the Applied Physics and Superconducting Technology Division at Fermilab and Co-Director of CAPST (Northwestern University-Fermilab Center on Applied Physics and Superconducting Technology).

Has received several awards for the discovery of nitrogen doping of SRF cavities, which has dramatically increased the efficiency of SRF resonators by more than a factor of two, among which: DOE Early Career Awardee in 2014, Presidential Early Career Award for Scientists and Engineers in 2017, IEEE PAST Award 2017, Frank Sacherer Prize from the European Physical Society and USPAS prize.

Wednesday, October 16 • 4 pm | Pancoe Auditorium