



**ROMES**  
SEMINAR SERIES

## QUANTUM COMPUTING AND SUPERCONDUCTING LC CIRCUIT BASED QUBITS

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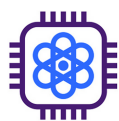
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PIEAS, ISLAMABAD**



### ABSTRACT

In this talk, in addition to an introduction to quantum computing, it will be focused on the fabrication and working of oscillator-based superconducting CPW resonators and transmon qubit. The coherence time of a qubit depends upon the quality factor of the CPW resonator. Although there is 5-6 order of magnitude improvement in the quality-factor of CPW resonator since their discovery, however, still coherence time of a qubit is below the required level. Very briefly, I will talk about the major factors responsible for low Q-factor and share our recent result related to improvement in Q-factor of CPW resonator.



Saleem Rao is an Associate Professor of Physics at KFUPM. In 2005, he received his Ph.D. in Physics (fabrication and characterization of CNT-based integrated circuits) from Florida State University. After completing his Ph.D., he served as faculty in the USA and in Pakistan, and in 2009 he joined KFUPM as an Assistant Professor. His area of research is nanostructure-based integrated circuit fabrication and its characterization. Since 2018, he is actively involved in superconducting quantum-chip fabrication and their low-temperature characterization in collaboration with UC Berkeley.

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