Invitation
„FEIN e.V. Colloquium:
Quantum Computing and Energy"
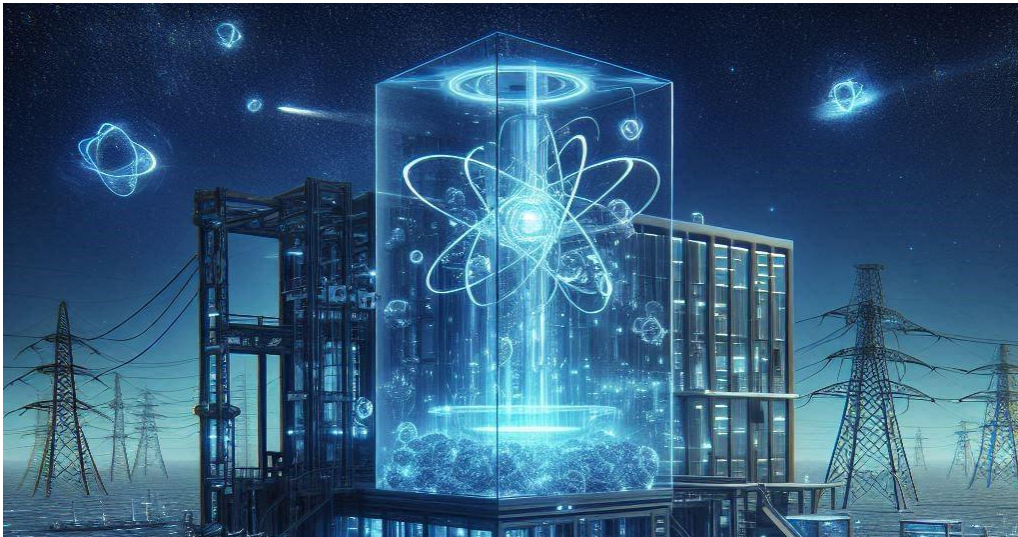
For Members and Guests of FEIN e.V. – Cost-free, registration not required

Monday, 23.09.2024
Online 16:00 - 17:00 CET (online event)

Zoom Link

https://rwth.zoom-x.de/j/69521522591?pwd=UvsvCqHLTUwLQ1vQFNsbw1gweabEbh.1

Moderator:

Prof. Antonello Monti, ACS, Fraunhofer FIT & FEIN

Presenters and Panelists:

Tobias Stollenwerk, Lead of Quantum Algorithms Group, FZJ

Kumar Ghosh, Senior Quantum Engineer, E.ON Digital Technology

In the first part of the event, the speakers present their topics. Afterwards, Prof. Monti moderates a discussion with the speakers, who will be answering questions of the audience. The event is in English.

Talk 1: State-of-the-art of Quantum Computing

In this presentation, the speaker provides an overview of state-of-the-art quantum computation, highlighting its real-world applicability. He introduces quantum concepts, discussing the advantages of quantum algorithms over classical ones, and exploring how hardware intricacies affect algorithm performance. Finally, he examines current approaches for developing effective quantum algorithms suitable for practical implementation on real hardware.

About the speaker, Tobias Stollenwerk

Tobias Stollenwerk did his Ph.D. in theoretical condensed matter physics at the University of Bonn, focusing on strongly correlated electron materials. He led the quantum computing group at the German Aerospace Center from 2013 to 2022 and is now leading the Quantum Algorithms group at the Institute for Quantum Computing Analytics (PGI-12) at Forschungszentrum Jülich. Since 2016, he has also been a visiting researcher at NASA Ames.

Talk 2: Quantum computing applications for the power and energy sector

The presentation discusses the growing significance of analytics and computing technologies in the power and energy sector, driven by increasing mathematical challenges and data-centric decision-making. It highlights the attention quantum computation (QC) has received due to recent breakthroughs and noisy intermediate-scale quantum (NISQ) devices, while noting that its applications in this sector remain underexplored. E.ONs ongoing investigations and an across-the-board view of the quantum computing technology applications in power and energy sector will be addressed.

About the speaker, Kumar Ghosh

Kumar Ghosh is a Senior Quantum Engineer at E.ON Digital Technology GmbH. In his current role, he is working on various applications of quantum computing and machine learning in the power and energy sector. Prior to E.ON, he was a faculty member at the University of Denver, USA and a postdoctoral researcher at Purdue University, USA. He holds a PhD in physics from Karlsruhe Institute of Technology (KIT), Germany.