

A portrait of Prof. dr. ir. Servaas Kokkelmans, a man with curly dark hair, a beard, and glasses, wearing a patterned grey shirt. The background is a blurred green and blue.

**Prof.dr.ir. Servaas Kokkelmans**  
**October 17, 2024**

**INAUGURAL LECTURE**

# **Quantum technology with strongly-interacting atoms**

**TU/e**

**EINDHOVEN  
UNIVERSITY OF  
TECHNOLOGY**

**DEPARTMENT OF APPLIED PHYSICS AND SCIENCE EDUCATION**

## **INVITATION**

Prof.dr.ir. Servaas Kokkelmans was appointed full professor of Quantum Gases and Quantum Technology at the Department of Applied Physics and Science Education at Eindhoven University of Technology (TU/e) on August 1, 2023. He will deliver his inaugural lecture on Thursday October 17, 2024.

The Executive Board of Eindhoven University of Technology cordially invites you to attend the inaugural lecture of Prof.dr.ir. Servaas Kokkelmans on **Thursday, October 17, 2024, at 4.00 PM**. The public lecture will be delivered in the Blauwe Zaal of the Auditorium. You do not need to register.

The title of the lecture is

**'Quantum technology with strongly-interacting atoms'**

After the lecture, drinks will be served in the Senaatszaal.

All professors are invited to join in the cortège. If you would like to participate, please register in advance with the Office of Doctoral Presentations and Academic Ceremonies, phone +31 (0)40 247 37 42, email [penp@tue.nl](mailto:penp@tue.nl).



**Prof.dr. Silvia Lenaerts**

Rector Magnificus

After October 17, 2024, the text of the inaugural lecture will be available online at [www.tue.nl/lectures](http://www.tue.nl/lectures).

Servaas Kokkelmans studied Physics at Eindhoven University of Technology. He obtained his MSC in 1996 and his PhD on Interacting Atoms in Clocks and Condensates in 2000. After this he went abroad for two postdoctoral research positions, the first at JILA, University of Colorado (USA) and the second at Laboratoire Kastler Brossel, ENS (France). In 2004, he returned to TU/e to take up the position of assistant professor in the Department of Applied Physics and, in 2017, associate professor. In 2018, he founded the Center for Quantum Materials and Technology Eindhoven QT/e. He also co-founded the Eindhoven Hendrik Casimir Institute in 2021. In 2023, he was appointed as chair of the Coherence and Quantum Technology group. His research focuses on strongly-interacting quantum gases and neutral atom quantum computing. He has obtained several personal grants, including NWO-Vici in 2015, and he initiated the Master Acknowledgement Program Quantum Technology that started in 2023.

#### **About the lecture**

Atoms: the smallest form of ordinary matter, created by Nature and the most stable and precise oscillators on the planet that measure our time, are also one of the most promising building blocks for new quantum technologies. In this lecture, Servaas Kokkelmans will take you on a journey through the quantum world of strongly-interacting ultracold atoms, where fundamental research and technology development go hand in hand. In this microscopic world the interactions can be controlled from the outside, which makes these systems extremely interesting to explore exotic types of superfluidity, but also to study unifying concepts that appear in other fields of physics.

This ultracold atomic world also has the necessary ingredients for building a scalable quantum computing platform. This platform could be the heart of a new technology that allows for an exponential and sustainable performance scale up which outperforms classical computers. A quantum computer would be highly beneficial for solving problems that are currently out of reach in physics or in chemistry, with a potential positive impact on society.

**Visiting address** Auditorium, Building 1, Groene Loper, Eindhoven

**Navigation address** De Zaal, Eindhoven, [www.tue.nl/map](http://www.tue.nl/map)