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Laser-generated toroidal helium plasmas

Kooij, V.L.

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Author: Kooij, V.L.

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Curriculum Vitae

Vincent Kooij

Education

Leiden University

Doctor of Philosophy (PhD), Experimental Physics
2015 – 2020 | Leiden, The Netherlands

Leiden University

Master of Science (MSc), Theoretical Physics, cum laude
1998 – 2003 | Leiden, The Netherlands

Institute for Advanced Electronics Rens & Rens

Ingenieursdiploma, Electronic Engineering, cum laude
1992 – 1997 | Hilversum, The Netherlands

Technical Secondary School Dominicus Savio

Secondary education, Electro-technical
1988 – 1992 | Amsterdam, The Netherlands

Corporate and academic experience

Founder and Principal

Silicon Research
December 1997 – Present | Amsterdam, The Netherlands

Founded a management and engineering consultancy specialising in bespoke solutions for the renewable energy, environmental, automotive, and other specialist industries requiring highly innovative products and services. Clients include governmental organisations in the Caribbean and the Netherlands, as well as corporations in the broadcasting services and maritime sector.

Doctoral Researcher

Huygens-Kamerlingh Onnes Laboratory (Leiden University)
July 2015 – October 2020 | Leiden, The Netherlands

Worked towards a PhD in experimental physics in the group of Spinoza laureate prof. dr. Dirk Bouwmeester. Studied laser-generated toroidal

Corporate and academic experience (cont.)

helium plasmas, as part of a larger study on self-organising knotted magnetic structures in plasma, which may find their application in nuclear fusion and astrophysical research.

Served as a teaching assistant for the quantum mechanics lecture series for four consecutive years.

Dissertation: Laser-generated toroidal helium plasmas.

Supervisors: prof. dr. D. Bouwmeester and dr. M. de Dood.

Interim Plant Manager

ContourGlobal

July 2010 – March 2014 | Bonaire, Netherlands Antilles

Provided operational and technical leadership to the \$56 million hybrid wind diesel power plant, with full day-to-day responsibility for its \$20 million annual operations, first at Ecopower Bonaire, and after its acquisition in 2013, at ContourGlobal Bonaire. Led the commissioning of the hybrid wind diesel power plant in 2010. Recovered the plant from a near bankruptcy. Participated in the arbitration against the government-owned distribution company over a tariff dispute. Award granted on all material grounds, thereby transforming the power plant into a profitable and reliable business. Participated in the successful share transfer to ContourGlobal in 2013.

Research Student

University of Oxford (Merton College and Dept. of Theoretical Physics)

September 2002 – February 2003 | Oxford, United Kingdom

Thesis: Emergent gravity from strongly correlated quantum systems.

Supervisors: prof. dr. J.J. Binney FRS and dr. S. Sarkar.

Research Student

Kamerlingh Onnes Laboratory (Leiden University)

July 2001 – December 2001 | Leiden, The Netherlands

Thesis: Measuring the thermal conductivity of normal liquid ^3He in a restricted geometry.

Supervisor: dr. R. Jochemsen.

Internship

National Aerospace Laboratory NLR

January 1996 – December 1996 | Amsterdam, The Netherlands

Internship as electronics engineer responsible for developing parts of a test system for the Data Link Processor Unit and the Avionics Data Link Processor used in modern aircraft.

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After a few years of solitary labour, Felix Smits joined the search for toroidal plasmas and I would like to thank him for his efforts and expertise. He also managed to interest the Dutch Institute for Fundamental Energy Research, in particular Waldo Bongers, in our project, for which they made available most microwave components used in our experiments.

I would like to thank Chris Smiet for explaining the many aspects of his simulations of the self-organising knotted magnetic structures in plasma, and for the moments when we joined forces in the lab.

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