

Jannis Teunissen

✉ jannis@teunissen.net
🌐 www.teunissen.net
Date of birth: July 8th, 1987



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Ars longa, vita brevis

Education

- 2009–2011 **Master**, *University of Amsterdam, cum laude.*
Computational Science
- 2005–2008 **Bachelor**, *University of Amsterdam, cum laude.*
Physics & Astronomy
- 1999–2005 **Secondary education**, *Barlaeus Gymnasium.*
Nature & Technology

Experience

- 2015–2016 **Postdoc**, *Centrum Wiskunde & Informatica.*
Stayed for four months as a postdoc
- 2011–2015 **PhD research**, *Centrum Wiskunde & Informatica, cum laude.*
3D Simulations and Analysis of Pulsed Discharges, supervisor: Ute Ebert
- 2008–2009 **Student assistant**, *University of Amsterdam.*
Physics Lab Courses 1 & 2
- 2008–2008 **IT support**, *Tele2 Netherlands, Amsterdam.*
First line IT support, internal help desk
- 2004–2008 **Tutor**, *Several high school students.*
Physics & Mathematics

Awards

- 2015 Student Award of Excellence at the joint meeting of 68th Gaseous Electronics Conference (GEC), 9th Int. Conf. on Reactive Plasmas, and 33th Symposium on Plasma Processing, Honolulu, Hawaii.

Interests

- Sports I play football at DVVA and maintain the web page www.dvva.nl. When the weather is good, I also ride a road bike.
- Go The ancient 19 × 19 board game, my level is around 1 dan.
- Technology I like to read about GNU/Linux, programming languages and other computer technology.

Selected talks

- 2016 *Understanding streamer paths through experiments and 3D simulations*, NNV-Symposium on Plasma Physics and Radiation Technology, Lunteren, The Netherlands
- 2015 *Advances in the 3D Simulation of Streamer Discharges*, Gaseous Electronics Conference, Honolulu, Hawaii USA
- 2015 **invited** *3D Models for nanosecond pulsed discharges: with new codes to quantitative understanding*, ICPIG, Iași, Romania
- 2015 **invited** *Streamer simulations in 3D with adaptive grids*, TEA-IS meeting, Vienna, Austria
- 2014 *Investigating the guiding of streamers in N₂/O₂ mixtures with 3D simulations*, Gaseous Electronics Conference, Raleigh, North Carolina, USA
- 2013 *Simulating the inception of pulsed discharges near positive electrodes*, Gaseous Electronics Conference, Princeton, New Jersey, USA

Journal publications

- [1] Aram H Markosyan, Jannis Teunissen, Saša Dujko, and Ute Ebert. Comparing plasma fluid models of different order for 1d streamer ionization fronts. *Plasma Sources Science and Technology*, 24(6):065002, Oct 2015.
- [2] Jannis Teunissen, Anbang Sun, and Ute Ebert. A time scale for electrical screening in pulsed gas discharges. *J. Phys. D: Appl. Phys.*, 47(36):365203, Aug 2014.
- [3] Jannis Teunissen and Ute Ebert. Controlling the weights of simulation particles: adaptive particle management using k-d trees. *Journal of Computational Physics*, 259:318–330, Feb 2014.
- [4] S Nijdam, E Takahashi, J Teunissen, and U Ebert. Streamer discharges can move perpendicularly to the electric field. *New Journal of Physics*, 16(10):103038, Oct 2014.
- [5] A. B. Sun, J. Teunissen, and U. Ebert. Why isolated streamer discharges hardly exist above the breakdown field in atmospheric air. *Geophys. Res. Lett.*, 40(10):2417–2422, May 2013.
- [6] Chao Li, Jannis Teunissen, Margreet Nool, Willem Hundsdorfer, and Ute Ebert. A comparison of 3d particle, fluid and hybrid simulations for negative streamers. *Plasma Sources Sci. Technol.*, 21(5):055019, Sep 2012.
- [7] Anbang Sun, Jannis Teunissen, and Ute Ebert. The inception of pulsed discharges in air: simulations in background fields above and below breakdown. *J. Phys. D: Appl. Phys.*, 47(44):445205, Oct 2014.
- [8] Anbang Sun, Jannis Teunissen, and Ute Ebert. 3-d particle modeling of positive streamer inception from a needle electrode in supercritical nitrogen. *IEEE Trans. Plasma Sci.*, 42(10):2416–2417, Oct 2014.
- [9] Anna Dubinova, Jannis Teunissen, and Ute Ebert. Propagation of a positive streamer toward a dielectric tip in pure nitrogen and in air under voltage pulses with subnanosecond rise time. *IEEE Trans. Plasma Sci.*, 42(10):2392–2393, Oct 2014.

Submitted / in preparation

- submitted S. Nijdam, J. Teunissen, E. Takahashi, U. Ebert. The role of free electrons in the guiding of positive streamers (*Plasma Sources Science and Technology*)

- submitted J. Teunissen, U. Ebert. 3D PIC-MCC simulations of discharge inception around a sharp anode in nitrogen/oxygen mixtures (Plasma Sources Science and Technology)
- in prep. J. Teunissen, U. Ebert. A Monte Carlo approach for photoionization in discharge simulations
- in prep. J. Teunissen, U. Ebert. AFiVO: a framework for finite volume simulations on adaptive refined meshes.
- in prep. J. Teunissen, U. Ebert. Simulating the inception of nanosecond pulsed discharges in nitrogen/oxygen mixtures
- in prep. N. Mascini, J. Teunissen, R. Noorlag, S. Willems, R. Heeren. Using MALDI-MSI data to predict head and neck cancer metastasis and disease-specific survival