

# Cees Dekker, Curriculum Vitae



CV last updated  
21-10-2013

## Personal data

Full name                      Cornelis Dekker  
Date and place of birth      7 april 1959, Haren, The Netherlands  
Nationality                    Netherlands  
Marital status                Married, 3 children  
Address                         Delft University of Technology  
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## Education

- 1977-1983 Experimental Physics at the University of Utrecht
- 1984-1988 Ph.D. in Physics from University of Utrecht; thesis "Two-dimensional spin glasses"

## Academic appointments

- 1984-1988                      Research assistant at the University of Utrecht
- 1988-1993                    Assistant professor at the University of Utrecht
- 1990-1991                    Visiting researcher at IBM Research, Yorktown Heights, USA
- 1993-1999                    Associate professor at Delft University of Technology
- Since 1999                    Antoni van Leeuwenhoek full professor at Delft University of Technology.
- 2000                            Visiting researcher at Technion – Israel Institute of Technology, Haifa, Israel
- Since 2000                    Full professor of Molecular Biophysics, Delft University of Technology
- 2001-2010                    Group leader of the Molecular Biophysics group
- Since 2006                    Distinguished University Professor, Delft University of Technology
- 2010-2013                    Founding Chair of a new Department of Bionanoscience, TU Delft
- Since 2010                    Scientific director of the 3TU Center of Excellence 'Bionanoapplications'
- Since 2010                    Director of the Kavli Institute of Nanoscience Delft

## Research overview

- 1981-1983 Undergraduate research projects in medical physics (visual system) and solid-state physics (NMR and Monte Carlo simulations in dilute magnetic systems).
- 1984-1988 Graduate research on low-dimensional spin glasses. Analysis of the dynamic susceptibility of a model spin glass led to experimental verification of theories on the critical dimensionality of random magnetic systems.
- 1988-1991 Noise phenomena in quantum point contacts and quantum Hall devices. Quantum size effects were found in the  $1/f$  noise and shot noise of such devices. These noise experiments were among the first in what later became a major line of research in mesoscopic physics.
- 1990-1994 Vortex dynamics in high- $T_c$  superconductors. The superconducting phase transition was studied from nonlinear electrical transport in high magnetic fields. Our experiments demonstrated a new ‘vortex-glass’ phase that was unknown in conventional superconductors.
- 1994-1998 Mesoscopic charge density waves. A unique thin-film and patterning technology was developed for a charge density wave conductor. Sliding charge density waves were studied in the previously unexplored phase-coherent regime of devices with sub-micron dimensions.
- 1994-2000 Assembly and properties of molecular nanostructures. We developed a large UHV system for atomic-scale fabrication and measurements, named NEXT (for Nanoscale EXperiments and Technology). A new method for deposition of organic materials was invented. Artificial molecular nanostructures were built by manipulating single molecules one-by-one by use of STM techniques.
- 1993-2007 Single carbon nanotubes. A new line of research was set up to study electrical transport through *single* organic molecules between nanoelectrodes. In 1996 a breakthrough was realized with carbon nanotubes. This was achieved in collaboration with the group of Nobel laureate Rick Smalley who provided nanotube material. We studied the electronic properties of these unique molecular carbon cylinders at the single-molecule level through STM and transport experiments. With these techniques, we discovered many of the basic properties of electrons in these nanotubes as well as developed prototypes of single-molecule devices. We were the first to demonstrate that these nanotubes are quantum wires at the single-molecule level, with outstanding physical properties. We were also the first to experimentally demonstrate that nanotubes are metals or semiconductors, depending on their chirality. Our discoveries led to a breakthrough in the field of molecular electronics where we established a single-molecule transistor at room temperature for the first time – something that had been a dream for at least 30 years. In 2001, the journal Science proclaimed this work to be the scientific ‘breakthrough of the year’.
- 1998-2000 Transport through DNA. In 1998 we started electrical transport experiments on DNA molecules between nanoelectrodes. After quite some experiments we concluded that DNA is a good insulator – an important statement in a field where this was heavily disputed. However, at the very short (few nm) length scale it still carries a current at large bias. From a very different perspective, we subsequently used of the assembly properties of DNA for biomolecule-based electronics.
- 2001-now In the past decade I shifted the main focus of my work towards the biophysics of single biomolecules, and more general towards nanobiology. This change of direction was

driven by my fascination for the astonishing functioning of biological molecular structures, as well as by the long-term perspective that many interesting discoveries could be expected in this field. The tools of nanotechnology do, in my opinion, provide exciting possibilities for studying biological systems. Below I mention a few projects in this area:

- 2001-2008 Ion and DNA transport in nanofluidic channels. We explored a range of phenomena of ion and DNA transport in fluidic channels in the size range from 10-1000 nm. We studied ion conductivity at low salt, streaming currents, charge inversion, and pressure-driven electrical power generation. Furthermore, we examined the size dependence of pressure-driven DNA transport in fluidic channels and the conformation and dynamics of DNA confined in slit-like nanofluidic channels.
- 2001-2009 Single-molecule studies of restriction enzymes. Using AFM and magnetic tweezers, we studied the motor activity of the Type I restriction- modification enzyme EcoR124I. We discovered that it constitutes a processive double-strand translocase that tracks the DNA duplex. This is one of multiple examples where we have studied the mechanics of motor proteins using single-molecule methods.
- 2002-2008 Employing biomolecular motors on chips. We explored the use of kinesin motor proteins to actively transport microtubule shuttles in engineered environments. We made inverted gliding assays with kinesin motors fixed to a substrate and movement of microtubules along the kinesin-coated surface, all within nanofluidic channels. The energy derived from ATP hydrolysis was harnessed to perform work on the nanoscale for possible purposes as molecular sorting, transporting or actuation. We realized rectification, sorting, controlled stopping and restarting, and localized delivery. In fact, we demonstrated a fairly complete technology of motor-driven active nanofluidics.
- 2001-now DNA break repair through homologous recombination. By use of single-molecule techniques, in particular atomic force microscopy and optical/magnetic tweezers, we study the structure, dynamics and function of DNA repair proteins. Specifically, we have studied filament formation and strand exchange and invasion mediated by the bacterial protein RecA as well as the human Rad50/51/54 proteins. More generally, our research is aimed at disentangling the mechanisms for organizing and maintaining DNA in the cell. Most of our studies are in vitro single-molecule studies but we have recently also moved to in vivo studies in live bacterial cells.
- 2001-now Translocation of DNA molecules through solid-state nanopores. We pioneered the use of solid-state nanopores, small holes in a thin solid-state membrane, We developed a new method to drill nanopores by use of TEM which allows real-time control and sub-nm size control. Translocation of single double-stranded DNA molecules is observed as transient dips in the ion current. The DNA-length dependence shows effects of the polymer blob size, the salt dependence indicates the DNA charge, and the current magnitude signals DNA folding. We discovered nanobubbles in studies of the noise properties of nanopores. We developed a new method where we use an optical tweezer to scan a single DNA molecule across a nanopore and measure local forces. Recently we extended our research to DNA-protein constructs and biomimetic nuclear pore complexes. We were the first to report graphene nanopores, and we now explore plasmonic nanopores and nanopores made of DNA origami.

- 2007-now Biophysics of bacteria in nanofabricated structures. Using nanofabrication we make controlled landscapes for bacteria. Bacteria can populate islands and colonize neighboring ones. We study the biophysics of bacterial motion in narrow slits as well as a number of basic phenomena in the adaptation and evolution of bacterial populations. We discovered that bacteria can pass very narrow constrictions (even significantly smaller than their diameter). These anomalously shaped ‘flat’ bacteria allow a new parameter regime to study cell division, and indeed we used this to prove that precise positioning of the cell division machinery is driven by the nucleoid.
- 2010-now Various single-molecule studies on DNA-protein complexes. We have developed a number of single-molecule techniques (most notably magnetic tweezers and fast AFM) and use these to study a variety of protein systems of interest, such as nucleosome assembly, HARP annealing helicases, and cohesin. Furthermore we study the properties of underwound DNA at the single-molecule level, for example, examining the dynamics of DNA plectonemes. We are now extending single-molecule studies also to TEM in liquid.
- 2012-now From biophysics of cell division to bottom-up biology. We study the protein machinery involved in bacterial cell division in *E. coli* cells where the relevant proteins (FtsZ, Min,..) and the nucleoid are fluorescently labeled. Recently we realized the shaping of live bacteria to arbitrary shapes (squares, triangles), model structures that we exploit to study the localization and dynamics of Min proteins and DNA in cells. Next to our live cell studies, we also explore a bottom up approach where we reconstitute proteins in nanofabricated chambers and lipid vesicles, with the long-term goals to develop synthetic cell division and to understand the emergence of biological complexity out of components

## Main research achievements to date

- 1988, first realization of a model two-dimensional spin glass and verification of its dynamics
- 1990, first measurement of quantum size effect in the noise of quantum point contacts
- 1991, demonstration of a new vortex-glass phase in high-temperature superconductors
- 1996, first mesoscopic charge density waves devices
- 1996, first electrical measurements on a single metal nanocluster between nanoelectrodes
- 1997, discovery that carbon nanotubes behave as quantum coherent molecular wires
- 1998, discovery that carbon nanotubes act as chirality-dependent semiconductors or metals
- 1998, discovery of room-temperature transistors, made from a single nanotube molecule
- 1999, first measurement of the wavefunction of single molecular orbitals of carbon nanotubes
- 1999, discovery of kink heterojunctions of carbon nanotubes which gave decisive evidence for a new Luttinger description of interacting electrons in nanotubes
- 2000, discovery that nanotubes can carry extraordinary large current densities
- 2000, resolved the controversial issue of electronic transport through DNA molecules by measurements of insulating behavior at the single molecule level
- 2000, demonstration of an AFM technique for single-molecule manipulation of nanotubes
- 2001, discovery of single-electron transistors at room temperature based on nanotubes
- 2001, realization of first logic circuits with carbon nanotube devices
- 2001, discovery of the molecular structure of DNA repair enzymes with AFM

- 2002, exploration of new assembly routes with carbon nanotubes functionalized with DNA
- 2003, demonstrated the first biosensors made out of a carbon nanotube
- 2003, resolved the structure and mechanism of DNA repair proteins
- 2003, discovery of a new technique for fabricating solid-state nanopores for DNA translocation
- 2004, discovery of new physics in translocation of DNA through nanopores
- 2004, first experimental study of ions conduction in nanofluidic channels
- 2004, first electrochemistry with individual single-wall carbon nanotubes
- 2004, STM detection and control of phonons in carbon nanotubes
- 2004, first electrical docking of microtubules on kinesin-coated nanostructures
- 2004, first biophysics characterization of the mechanical properties of double-stranded RNA
- 2004, first single-molecule study of DNA translocation by a restriction-modification enzyme
- 2005, discovery of the mechanism of DNA uncoiling by topoisomerase enzymes
- 2005, discovery of long-range conformational changes in Mre11/DNA repair complexes
- 2005, first force measurements on a DNA molecule in a nanopore
- 2006, first demonstration of molecular sorting in a lab on a chip using biomotors
- 2006, discovery of nanobubbles in solid-state nanopores
- 2006, first estimate of electrokinetic energy conversion in a nanofluidic channel
- 2007, first real-time detection of strand exchange in homologous recombination by RecA
- 2007, discovery of a low persistence length of ends of microtubules
- 2007, resolved the mechanism of biosensing with carbon nanotubes
- 2008, first observation of protein-coated DNA translocation through nanopores
- 2008, resolved the origin of the electrophoretic force on DNA in nanopores
- 2008, discovered a significant velocity increase of microtubules in electric fields
- 2008, discovered an anomalous electro-hydrodynamic orientation of microtubules
- 2008, resolved the origin of noise in carbon nanotubes in liquid
- 2009, discovery of a new phenotype for bacteria in narrow nanofluidic slits
- 2009, first detection of local protein structures along DNA using solid-state nanopores
- 2010, developed a new way ('wedging transfer') to manipulate nanostructures
- 2010, first report of DNA translocation through graphene nanopores
- 2010, realized hybrid nanopores by directed insertion of  $\alpha$ -hemolysin into solid-state nanopores
- 2011, first in vitro measurements of transport across a single biomimetic nuclear pore complex
- 2011, development of multiplexed magnetic tweezers for kilo-molecule experiments
- 2011, resolved the mechanism of homology recognition in DNA homologous recombination
- 2012, discovery that nucleoid occlusion underlies the accuracy of bacterial cell division
- 2012, first ever study of the dynamics DNA supercoils and the discovery of supercoil hopping
- 2013, controlled shaping of live bacterial cells into arbitrary shapes
- 2013, discovery of spontaneous fluctuations in the handedness of histone tetrasomes □
- 2013, first study of Min protein oscillations in shape-shifted bacteria

## **Awards and prizes**

- 1999 recipient of the Discover Award for Emerging Future Technologies
- 1999, appointment as Antoni van Leeuwenhoek professor
- 2000 recipient of a NWO Pionier Award for ‘Single-molecule electronics from nanotubes to DNA’
- 2001 Burgen scholar, Academia Europaea
- 2001 recipient of the Agilent Europhysics Prize “for the discovery of multi and single walled carbon nanotubes and pioneering studies of their fundamental mechanical and electronic properties”
- 2002 recipient of the Julius Springer Prize for Applied Physics “for the discovery of the electronic properties of carbon nanotubes and for pioneering work on their application in single-molecule electronic devices”
- 2003 elected as member of the Royal Netherlands Academy of Arts and Sciences (KNAW)
- Honorary doctorate, Universiteit Hasselt, Belgium, 2003
- 2003 NWO Spinoza award for outstanding, pioneering and inspiring scientific work (highest-level scientific award in the Netherlands)
- 2003 Diesrede (annual major speech at the Dies Natalis of Delft University)
- 2004 elected as Fellow of the Institute of Physics
- 2005 honorary Ørsted lecture, Denmark
- 2005 appointed member of the New York Academy of Sciences
- 2005 recipient of the International Montefiore Award for outstanding contributions of electrical engineering to biomedical engineering and life sciences
- 2006 Appointed as a Distinguished University Professor at TU Delft, which is an honorary title given to only very few (currently 3) professors in recognition of outstanding achievements.
- 2006 recipient of the Innovation in Nano Research Prize, awarded by the Minister of Science and Technology, Republic of Korea
- 2006 elected as a Fellow of the American Physical Society ‘for seminal experimental discoveries of the electronic properties of carbon nanotubes and other contributions to nanoscience’
- 2009 ERC Advanced Grant recipient
- 2012 recipient of the Nanoscience Prize from the International Society for Nanoscale Science, Computation and Engineering for “outstanding discoveries and contributions to the field of (biomolecular) nanoscale science and nanotechnology”
- 2012 recipient of the Physica Prize of the Dutch Physical Society
- 2013 elected as member of the Bataafsche Genootschap der Proefondervindelijke Wijsbegeerte

## **Other honors**

- ~240 publications, including 20+ in Nature and Science, see publication list on [ceesdekker.net](http://ceesdekker.net)
- H-index 73
- Our work has received over 38,000 citations, and our papers are currently cited at a rate of more than 3000 times per year.
- 9 publications have been cited more than 1000 times, 64 papers got cited more than 100 times.

- In 2001, our work was selected as ‘Breakthrough of the year’ by the journal Science.
- The work was highlighted with a dozen covers on journals such as Nature, Science, PNAS, Molecular Cell, see [http://www.mb.tn.tudelft.nl/cover\\_gallery.html](http://www.mb.tn.tudelft.nl/cover_gallery.html)
- Throughout the years, our work has received a lot of attention and appreciation from both the scientific community (as evident from editorials in journals such as Nature, Science, Physics Today, Physics World, etc.) and the wider audience (with news coverage in the New York Times, Wall Street Journal, Le Monde, Scientific American, etc).
- Our group has consistently received the highest possible scores for quality in independent external on-site reviews.
- In 2007, Dekker co-initiated a new strategic direction at Delft University of Technology by convincing the Board of the University to set up a new large initiative in Bionanoscience at Delft. An entire new department has been formed aimed at fostering research at the interface between nanoscience and molecular, synthetic and cell biology. Dekker took a lead in establishing this new department as its first Chairman.
- In 2012, Dekker was the main applicant in a consortium at Delft and Leiden that managed to receive a significant (51 M€) grant for research ‘Frontiers of Nanoscience’ (NanoFront).

### **Selected advisory committees, editorial boards, and other professional services**

- 2001-2011 Governing board (Raad van Bestuur) of FOM
- 2000-2006 FOM Werkgemeenschap Fysica van Levensprocessen
- 2006-2009 Commissie voor Biochemie en Biofysica of the Dutch Royal Academy of Sciences (KNAW)
- 2002-2010 Scientific advisory board of NABsys, a startup nanobiotech company in Providence, US
- 2010-2012 Raad voor Aard- en Levenswetenschappen of the Dutch Royal Academy of Sciences
- 2008 RGO/KNAW Commissie Synthetische Biologie
- 2005-2011 Editorial Board of Small
- 2005-2010 Editorial Board of NanoBiotechnology
- 2001 Editorial Advisory board for the International Society for Nanoscale Science, Computation and Engineering
- 2001-2006 Editorial Board of Nano Letters
- From 2002 Editorial Board of Nanotechnology
- 2003 Scientific Advisory Board of GenoRx Inc, silicon valley startup company focused on DNA sensing applications
- 2003 Program committee International Conference on Biological Physics, Gotenborg, Sweden
- 2004 Advisory committee for the Conference “Images of Science. New Interactions between Science and Society” organized by the Rathenau Institute and the Dutch Ministry of Education
- 2004 Commissie ‘Gevolgen nanotechnologie’ van de KNAW
- 2004 Program committee annual ALW/FOM/VvBF&BT meeting on Molecular and Cellular Biophysics, Lunteren
- From 2006 Wetenschappelijke Adviesraad van het Instituut voor CultuurEthiek
- From 2007 Editorial Advisory Board of ACS Nano

- 2007 Organizer (together with P. McEuen) of the first Kavli futures symposium ‘The merging of bio and nano – towards cyborg cells’, Greenland
- 2008 Organizing committee workshop Synthetic Biology, Groningen
- 2008 Scientific advisory committee for the NanoScience Center in Technion, Israel
- From 2008 Editorial Board of Nano Research
- 2010-2012 Editorial Board of Integrative Biology
- From 2013 Editorial Board of Trends in Biotechnology
- From 2010 Scientific Director of the Centre of Competence Applications of Nanotechnology and the Centre for Bio-Nano Applications of the three Technical Universities in the Netherlands.
- From 2013 Chairman of the Steering group for the 51 M€ program ‘Frontiers of Nanoscience’
- From 2013 Scientific Advisory Board of CeNS, the Center for Nanoscale Science at LMU Munich
- 2013 Main organizer of the first Kavli Nanoscience Nexus at Puerto Rico – a joint meeting of the 4 Kavli Institutes of Nanoscience at Caltech, Cornell, Delft, and Harvard
- From 2013 Advisory Board of the UK Multidisciplinary Synthetic Biology Research Centre at Oxford

## **Teaching**

1984-1988 Utrecht

- Physics lab courses for biology students
- Information technology courses for pharmaceutical students
- Medical physics lab courses for medical biology students

1988-1993 Utrecht

- Coordinator for instructions and exams for the full curriculum of second-year physics students. This involved the organization, supervision, and practical training of students for quantum mechanics, atomic physics, thermodynamics, statistical physics, waves and optics, and solid-state physics
- Lab course ‘noise in semiconductors’ for physics students
- Some courses on solid-state physics
- Graduate course on ‘disordered systems’
- Instructor for course on ‘Solid state physics’ for physics students
- Course on ‘Physics of conducting polymers’

1998-2004 Delft

- Taught the main-curriculum course on ‘Solid state physics’ for physics students.

2004-2008 Delft

- Lectures on ‘Molecular motors’ in the Biophysics course for masters physics students

2005- 2013 Delft

- Developed and taught the course ‘Introduction to biophysics’ for physics freshmen

2011- 2013



- Setting up an entirely new Bachelors program on Nanobiology, which is a joint effort of Erasmus University and TU Delft. The program, now in its second year, is highly successful, drawing nearly 100 freshmen students annually. A Nanobiology masters is now in preparation.

2012- now Delft

- Teaching a variety of guest lectures
- Currently involved in developing a new university-wide minor.

### **Local organizational assignments at Delft University**

- 2004-2006 Chairman faculty Department of NanoScience
- 2006 Co-organizer Kavli workshop for science journalists
- 2006-2007 Management team Department of NanoScience
- 2006-now Supplementary advisor to the Board of the University as Universiteitshoogleraar
- 2007 Co-initiator of a new Department of Bionanoscience
- 2008-2013 Chairman of search committee for new faculty
- 2009-2013 Management team of the Faculty of Applied Sciences
- 2010-2013 Founding chair of Department of Bionanoscience
- 2010-now Scientific director of the 3TU Center of Excellence 'Bionanoapplications'
- 2010-now Director of the Kavli Institute of Nanoscience Delft

### **Funding from external sources**

R. J. J. Zijlstra and C. Dekker

"Noise spectroscopy in semiconductors and semiconductor devices".

FOM werkgemeenschap Halfgeleiders 1988

H. W. de Wijn, A. F. M. Arts, C. Dekker and J. Dijkhuis

"Dynamics of phonons and magnons".

FOM werkgemeenschap Vaste Stof 1989

H. W. de Wijn and C. Dekker

"Noise spectroscopy in semiconductors and semiconductor devices".

FOM werkgemeenschap Halfgeleiders 1990

H. W. de Wijn, A. F. M. Arts, and C. Dekker

"Dynamics of phonons and magnons".

FOM werkgemeenschap Vaste Stof 1991

R. J. J. Zijlstra and C. Dekker

"Noise spectroscopy in semiconductors and semiconductor devices".

Esprit II Basic Research Action "Electrical fluctuations and noise in advanced microelectronics",  
1988

C. Dekker

"Experiments on the glass phase of magnetic flux lines in high-Tc superconductors"

NATO Science fellowship, 1990

H. W. de Wijn and C. Dekker

"The vortex-glass phase in disordered superconductors"

Nationaal Onderzoeksprogramma Hoge-Tc Supergeleiders, 1992

C. Dekker, L. J. Geerligs, and J. E. Mooij

"Electrical transport through a single polymer chain"

FOM beleidsruimte 1993

J. E. Mooij and C. Dekker

"STM experiments on single conducting polymer chains".

FOM werkgemeenschap Vaste Stof 1993

J. E. Mooij, G. E. W. Bauer, and C. Dekker

"Mesoscopic charge-density-wave junctions".

FOM beleidsruimte 1994

J. E. Mooij, C. Dekker, P. Hadley, and C. J. P. M. Harmans

"Quantum transport in nanostructures"

FOM werkgemeenschap Vaste Stof 1994

J. E. Mooij, C. Dekker, P. Hadley, C. J. P. M. Harmans and L.P. Kouwenhoven

"Quantum transport in nanostructures"

FOM werkgemeenschap Gecondenseerde Materie 1996

C. Dekker

"Single carbon nanotubes"

FOM projektruimte 1997

C. Dekker and G.C.A.M. Janssen

"Quantum transport through single molecular wires and switches"

FOM projektruimte 1998

C. Dekker and A. W. Dunn

"Quantum electronic transport through a single row of C60 molecules"  
TMR European Community program 1998

C. Dekker

"Electrical transport through DNA molecules"  
FOM projektruimte 1999

C. Dekker, M. E. Michel-Beyerle, C. Schönenberger, U. Sivan, J. N. Patillon

"DNA-based electronics"  
EC IST program 1999

J. N. Patillon, C. Dekker, M. Golden, C. Delalande, P. Ordejon

"Self-assembly with carbon nanotubes: Towards devices for information processing"  
EC IST program 1999

E. S. Soldatov et al

"SET transport in molecular cluster nanostructures and devices based on it."  
EC INTAS program 2000

G.W.K. van Dedem, C. Dekker, M.J. Vellekoop, I. T. Young

"Nanoscale electrophoresis"  
FOM program Physics for Technology 2000

Th. Schalkhammer et al

"LifeTech"  
Delft University of Technology DIOC program 2000

K. Firman et al

Single-molecule analysis of a DNA-based molecular motor  
EMBO Fellowship 2001

C. Dekker

Single-molecule electronics from nanotubes to DNA  
NWO Pionier program 2001

C. Wyman, J. van Noort, C. Dekker, R. Kanaar

Dynamic imaging and single-molecule manipulation of DNA repair reactions  
FOM Fysische biologie II, 2001

K. Firman et al,  
A molecular magnetic switch that links the biological and silicon worlds  
EC IST program, 2002

L. Movileanu and C. Dekker  
Threading a single protein through a nanopore  
FOM projectruimte 2002

C. Dekker  
Deposition equipment for nanoscience  
FOM 2002

A. van den Berg et al  
Nanofluidics  
NanoImpuls, 2002

C. Dekker  
NWO Spinoza, 2003

N. H. Dekker and C. Dekker  
Unraveling the structure of RNA with single-molecule experiments  
FOM Biomolecular physics 2003

M. Rubio et al  
Molecular Machines – Design and Nano-Scale Handling of Biological Antetypes and Artificial Mimics- BIOMACH  
EC 2004

C. Dekker  
Four grants within the Dutch National Nanotechnology Initiative  
NanoNed, 2005

K. Firman et al  
A Biological Nanoactuator as a Molecular Switch for Biosensing  
EC IST program, 2006

G. Wuite et al  
DNA in action: Physics of the genome  
FOM, 2007

I. Gut et al  
READNA: Groundbreaking DNA Sequencing & Genotyping, new concepts/long term innovations  
EC, 2007

U. Keyser et al  
Novel spectroscopy with nanopores  
EC, 2009

C. Dekker  
Nanostructures for biology  
ERC Advanced Grant, 2009

P. Schwille, C. Dekker, D. Sherratt  
Synthetic biology of the bacterial cell division  
Eurocores proposal ALW, 2009

C. Dekker, R. Kanaar, C. Wyman  
Single-molecule studies of DNA repair proteins acting on DNA  
Nanonext, 2010

J.E. Keymer and C. Dekker  
Antibiotic resistance acquisition of bacteria in nanostructures  
Nanonext, 2010

C. Dekker  
Functionalization of hybrid bionanopores  
Nanonext, 2010

G. Schitter and C. Dekker  
Development and application of fast AFM in liquid for real-time imaging of motor proteins acting on DNA  
Nanonext, 2010

EC consortium  
Graphene flagship  
EC, 2013

C. Dekker et al  
Frontiers of Nanoscience  
OCW/NWO, 2012

C. Dekker and H. Zandbergen  
Real-time TEM imaging of DNA dynamics  
NanoFront, 2013

A. Aksimentiev, M. Jonsson, C. Dekker

Plasmonic nanopores for trapping, controlled motion and sequencing of DNA  
NIH, 2013

W.T.S. Huck, B. Poolman, C. Dekker

Complex enzymatic networks for the bottom-up construction of a synthetic cell  
NWO-CW, 2013, pending

B.M. Mulder and C. Dekker

Novel polymer physics of DNA that is squeezed into a tight spot  
FOM, 2013, pending

## **Patents**

A. Bachtold and C. Dekker

'Electronic device using carbon nanotubes'  
US patent 7211853 B2

I. de Vlaminck, C. Plesa, C. Dekker

'A nanopore sensor and method of selective detection of analytes in a sample.'  
NL Patent 2007328

G.F. Schneider, I. de Vlaminck, C. Dekker

'Image forming technique'  
NL Patent 2007938

C. Joo, C. Dekker, H.G.T.M. Van Ginkel, A.S. Meyer

'Single molecule protein sequencing'  
Patent application pending

G.F. Schneider, C. Dekker

'Graphene coating'  
Patent application OCT-11-072 pending

## List of publications

239. R. Vlijm, M. Lee, J. Lipfert, A. Lusser, C. Dekker<sup>1</sup>, N.H. Dekker<sup>□</sup>  
Nucleosome assembly dynamics involve spontaneous fluctuations in the handedness of tetrasomes<sup>□</sup>  
Science, under review
238. C. Plesa, A. Ananth, V. Linko, C. Gülcher, A. Katan, H. Dietz, C. Dekker<sup>□</sup>  
Ionic permeability and mechanical properties of DNA origami nanoplates on solid-state nanopores<sup>□</sup>  
ACS Nano, under review
237. □ C. Plesa, L. Cornelissen, M.W. Tuijtel, C. Dekker<sup>□</sup>  
Non-equilibrium folding of individual DNA molecules recaptured up to 1000 times in a solid state nanopore<sup>□</sup>  
Nanotechnology, in print
236. □ G.F. Schneider, Q. Xu, S. Hage, S. Luik, J.N.H. Spoor, S. Malladi, H. Zandbergen C. Dekker<sup>□</sup>  
Tailoring the hydrophobicity of graphene nanopores<sup>□</sup>  
Nature Commun. 4, Article number: 2619 doi:10.1038/ncomms3619 (2013) □ □ □ □ □
235. □ M.T.J. van Loenhout, I. De Vlaminck, B. Flebus, J.F. den Blanken, L. Zweiffel, K.M. Hooning, J.W.J. Kerssemakers, C. Dekker, □  
Scanning a DNA molecule for bound proteins using hybrid magnetic and optical tweezers<sup>□</sup>  
Plos One 8, e65329 (2013) □ □ □ □ □
234. □ F. J.H. Hol, P. Galajda, R.G. Woolthuis, C. Dekker, J.E. Keymer<sup>□</sup>  
Spatial structure prevents cheater dominance in a bacterial dilemma<sup>□</sup>  
Plos One, in print
233. □ C. Plesa, S.W. Kowalczyk, R. Zinsmeister, A. Y. Grosberg, Y. Rabin, C. Dekker<sup>□</sup>  
Fast Translocation of Proteins through Solid State Nanopores<sup>□</sup>  
Nano Lett. 13, 658 (2013) □ □ □ □ □
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Finite-Size Effects on the Vortex-Glass Phase Transition in Thin  $\text{YBa}_2\text{Cu}_3\text{O}_7$  Films  
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The Superconducting Phase of  $\text{YBa}_2\text{Cu}_3\text{O}_7$  Films in High Magnetic Fields: Vortex Glass or Bose Glass  
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Voltage Noise of  $\text{YBa}_2\text{Cu}_3\text{O}_7$ - (Films in the Vortex-Liquid Phase,  
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*Physica B* 194-196, 1911 (1994)
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Absence of a Finite-Temperature Vortex-Glass Phase Transition in Two-Dimensional  $\text{YBa}_2\text{Cu}_3\text{O}_7$  Films  
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18. C. Dekker, W. Eidelloth, and R. H. Koch  
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*Phys. Rev. Lett.* 68, 3347 (1992)
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Dimensionality Crossover of the Superconducting-Normal Transition in  $\text{YBa}_2\text{Cu}_3\text{O}_7$  Thin Films both at High Magnetic Field and at Zero Field  
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Magnetic Field Effects on Switching Noise in a Quantum Point Contact  
Phys. Rev. B 46, 15523 (1992).
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Low-Frequency Noise in Quantum Point Contacts  
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Low-Frequency Noise of Quantum Point Contacts in the Ballistic and Quantum Hall Regime  
Physica B 175, 213 (1991)
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Spontaneous Resistance Switching and Low-Frequency Noise in Quantum Point Contacts  
Phys. Rev. Lett. 66, 2148 (1991).
12. A. F. M. Arts, C. Dekker, and H. W. de Wijn  
Spin-glass dynamics in the two-dimensional Ising  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
in Relaxation and Related Topics in Complex Systems, ed. by I. A. Campbell and C. Giovannella (Plenum Press, New  
York, 1990), p. 23.
11. C. Dekker, A. F. M. Arts, H. W. de Wijn, A. J. van Duynveldt, and J. A. Mydosh  
Activated dynamics in a two-dimensional Ising spin-glass  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
Phys. Rev. B 40, 11243 (1989)
10. C. Dekker en A. F. M. Arts  
Dynamica van spinglazen  
Nederlands Tijdschrift voor Natuurkunde B 54, 149 (1988) [in Dutch].
9. C. Dekker  
Two-dimensional spin glasses  
Ph. D. thesis, University of Utrecht, 1988.
8. C. Dekker, A. F. M. Arts, and H. W. de Wijn  
Static and dynamic properties of the two-dimensional Ising spin glass  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
J. Phys. (Paris) 49, C8-1013 (1988)
7. C. Dekker, A. F. M. Arts, and H. W. de Wijn  
Magnetic order in the two-dimensional randomly mixed ferromagnet-antiferromagnet  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
Phys. Rev. B 38, 11512 (1988)
6. C. Dekker, A. F. M. Arts, and H. W. de Wijn  
Static critical behavior of the two-dimensional Ising spin glass  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
Phys. Rev. B 38, 8985 (1988).
5. C. Dekker, A. F. M. Arts, H. W. de Wijn, A. J. van Duynveldt, and J. A. Mydosh  
Activated dynamics in the two-dimensional Ising spin-glass  $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$   
Phys. Rev. Lett. 61, 1780 (1988)
4. C. Dekker, A. F. M. Arts, and H. W. de Wijn  
 $\text{Rb}_2\text{Cu}_{1-x}\text{Co}_x\text{F}_4$ , a two-dimensional Ising spin glass  
J. Appl. Phys. 63, 4334 (1988)



3. C. Dekker, A. F. M. Arts, H. W. de Wijn, and J. K. Kjems  
Breakup of long-range order in the diluted antiferromagnet  $K_2Mn_xZn_{1-x}F_4$  in zero magnetic field  
Phys. Rev. B 35, 7157 (1987).
2. C. Dekker, B. J. Dikken, and A. F. M. Arts  
Monte Carlo investigation of diluted antiferromagnets in high magnetic fields  
Solid State Commun. 54, 887 (1985)
1. B. J. Dikken, C. Dekker, A. F. M. Arts, and H. W. de Wijn  
NMR study of local magnetizations in diluted two-dimensional antiferromagnets  
Phys. Rev. B 32, 5787 (1985)

## Invited talks

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Below, I list invited presentations since 1997 (Before 1997, I did not keep a record of invited talks)

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### 1997

*Individual single-wall carbon nanotubes as quantum wires*  
International Winterschool on Electronic Properties of Novel Materials  
Kirchberg, 1-8 March 1997

*Thin film growth, patterning, and properties of the charge-density-wave conductor  $Rb_{0.30}MoO_3$*   
March Meeting of the American Physical Society  
Kansas City, 17-21 March 1997

*Individual single-wall carbon nanotubes as quantum wires*  
Physics colloquium  
University Leiden, 20 June 1997

*Individual single-wall carbon nanotubes as quantum wires*  
Physics colloquium  
University of Basel, 24 June 1997

*Individual single-wall carbon nanotubes as quantum wires*  
International Workshop on Science of Carbon Nanotubes  
Lexington, 10-11 July 1997

*Individual single-wall carbon nanotubes as quantum wires*  
Workshop Physical and Chemical Foundations of Molecular Electronics  
Stuttgart, 1-2 October 1997

*Individual single-wall carbon nanotubes as quantum wires*  
Physics colloquium  
University of Amsterdam, 7 October 1997

*Carbon nanotubes as ultimate fibres and quantum wires*  
Physics colloquium  
University of Wien, 21 October 1997

*Nanotube quantum wires*  
Physics colloquium  
University of Nijmegen, 28 October 1997

*Individual carbon nanotubes as molecular quantum wires*  
Workshop on Functional Polymers  
Amersfoort, 5 November 1997

*Carbon nanotubes as molecular quantum wires*  
International Conference on Molecular Electronics  
Puerto Rico, 14-18 December 1997

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**1998**

*Moleculaire Elektronica?*

Seminar

Utrecht, 13 January 1998

*Individual carbon nanotubes as molecular quantum wires.*

Physics colloquium

University Groningen, 11 February 1998

*Electronic structure and transport experiments on individual single-wall carbon nanotubes*

International Winterschool on Molecular nanostructures

Kirchberg, 1-5 March 1998

*Individual carbon nanotubes as molecular quantum wires.*

March Meeting of the American Physical Society

Los Angeles, 16-19 March 1998

*Individual carbon nanotubes as molecular quantum wires*

Physics colloquium, Philips Research

Eindhoven, 25 March 1998

*Individual carbon nanotubes as molecular quantum wires*

National Solid State Seminar

Leiden, 15 May 1998

*Carbon nanotubes as molecular quantum wires.*

Physics colloquium, Institut für Festkörper- und Werkstofforschung

Dresden, 11 June 1998

*Carbon nanotubes as molecular quantum wires.*

International Symposium on Carbon based materials for microelectronics, European Material Research Society,

Strasbourg, 15-17 June 1998

*Carbon nanotubes as molecular quantum wires.*

International Conference on Disorder and Interactions in Quantum Hall and Mesoscopic Systems

Santa Barbara, 9-11 August 1998

*Carbon nanotubes as molecular quantum wires.*

Colloquium

Rice University, Houston, 13 August 1998

*Carbon nanotubes as molecular quantum wires.*

Physics colloquium

IBM Research Labs, Yorktown Heights, 14 August 1998

*Electron transport through individual carbon nanotubes.*

CECAM Workshop on Nanotubes

Lyon, 1 September 1998

*Electronic structure of individual carbon nanotubes from STM spectroscopy.*

CECAM Workshop on Nanotubes

Lyon, 2 September 1998

*Carbon nanotubes as molecular quantum wires.*  
Ninth International Symposium on Small particles and inorganic clusters  
Lausanne, 3-5 September 1998

*Carbon nanotubes as molecular quantum wires.*  
International Workshop on Conductance through single atoms and molecules  
Leiden, 10-11 September 1998

*Carbon nanotubes as molecular quantum wires.*  
International Workshop of the European Nanostructure Network PHANTOMS Phasdom98  
Neuchâtel, 27-29 September 1998

*Carbon nanotubes as molecular quantum wires.*  
Physics colloquium  
Harvard University, Boston, 2 October 1998

*Een enkel molecuul als transistor*  
STT Nanotechnology Symposium  
Delft, 8 October 1998

*Carbon nanotubes as molecular quantum wires*  
Physics colloquium  
Free University Amsterdam, 14 October 1998

*Device applications of carbon nanotubes.*  
SRC/NASA Workshop on Emerging issue and opportunities in nanotubes and nanoelectronics  
Stanford, 11-12 November 1998

*Carbon nanotubes as molecular quantum wires.*  
International Conference on Molecular Nanotechnology  
Santa Clara, 13-15 November 1998

*Elektronisch transport door een enkel molecuul*  
Kenniscadeiscope TPD/TUD  
Delft, 20 November 1998

*Carbon nanotubes as molecular quantum wires.*  
International Workshop on Electron Transmission through Molecules and Molecular Interfaces  
Maagan, Israël, 12-17 December 1998

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**1999**

*Carbon nanotubes as molecular quantum wires*  
Physics colloquium  
DESY Hamburg, 7 January 1999

*Carbon nanotubes as molecular quantum wires*  
Nanoscience symposium  
München, 18 January 1999

*Carbon nanotubes as molecular quantum wires.*  
International Conference on Quantum Physics at the Mesoscopic Scale  
Les Arcs, 23-30 January 1999

*Carbon nanotubes as molecular quantum wires*

Marie Curie symposium  
Nijmegen, 10 February 1999

*Molecular Electronics; a birds eyes view of first experiments with single molecules*

Plenary evening lecture at the national chemistry (SON) meeting on fluids and interfaces  
Lunteren, 4 March 1999

*Carbon nanotubes as molecular quantum wires*

Plenary talk of the General Meeting of the German Physical Society (DPG)  
Heidelberg, 15-19 March 1999

*Carbon nanotubes as molecular quantum wires*

Niels Bohr Institute Colloquium  
Copenhagen, 31 March 1999

*Recent SPM and transport experiments on individual single-wall carbon nanotubes*

International Symposium on the Science and Technology of Nanostructured Materials  
Philadelphia, 19-20 March 1999

*Carbon nanotubes as molecular quantum wires*

Faculty of Applied Sciences seminar  
Delft, 20 May 1999

*Carbon nanotube kinks as intramolecular junctions*

International Workshop on the Science and Application of Nanotubes (NANOTUBE-99)  
Lansing, 25-27 July 1999

*Carbon nanotubes as molecular quantum wires*

22nd International Conference on Low-Temperature Physics  
Helsinki, August 4-11 1999

*Carbon nanotube kinks as intramolecular junctions*

International Conference on Electron Transport in Mesoscopic Systems  
Göteborg, 12-15 August 1999

*Carbon nanotubes as molecular quantum wires*

Plenary talk at the European Conference on Molecular Electronics ECME99  
Linköping, 8-12 September 1999

*Carbon nanotubes as molecular quantum wires*

General Physics colloquium  
University Utrecht, 16 September 1999

*Carbon nanotubes as molecular quantum wires*

Marel symposium  
University Leiden, 19 October 1999

*Towards carbon electronics: Electrical properties of carbon nanotube quantum wires*

American Vacuum Society 46th International Symposium, topical meeting on Nanotubes Nanoelectronics and Field Emission  
Seattle, USA, 25 - 29 October 1999

*Carbon nanotubes as molecular quantum wires*

General Physics colloquium  
Caltech, 28 October 1999

*Direct transport experiments through DNA molecules*  
Colloquium  
Caltech, 28 October 1999

*Elektronika met enkele moleculen ?*  
Technologiedag TU Delft,  
Delft, 13 November 1999

*Carbon nanotubes as molecular quantum wires*  
Science Frontier Tsukuba'99  
Tsukuba, Japan, 17-19 November 1999

*Transport and STM experiments through single carbon nanotubes*  
Carbon Nanotube workshop  
Tsukuba, Japan, 19 November 1999

*Carbon nanotubes as molecular quantum wires*  
General physics colloquium  
University Twente, 15 December 1999

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## 2000

*Carbon nanotubes as molecular quantum wires*  
Physics colloquium  
ETH, Zurich, 12 January 2000

*Carbon nanotubes as molecular quantum wires*  
Colloquium Amolf,  
Amsterdam, 7 February 2000

*Carbon nanotubes as molecular quantum wires*  
General physics colloquium  
Orsay, 22 February 2000

*Carbon nanotubes as molecular quantum wires*  
Plenary talk at the Condensed Matter Physics meeting of the European Physical Society  
Montreux, 16 March 2000

*Carbon nanotubes for molecular electronics*  
March Meeting of the American Physical Society, Minneapolis  
Invited talk at the symposium on Molecular and Nanoscale Electronics  
Minneapolis, 22 March 2000

*Carbon nanotubes as molecular quantum wires*  
General physics colloquium, Technion  
Haifa, Israel, 19 July 2000

*Recent SPM and transport results on single carbon nanotubes*  
Invited talk about nanoelectronics at the Elba-Max Planck Forum 2000 on Nanoscale Science and Technology, Rome,  
Italy 27-29 September 2000

*Transport through junctions of carbon nanotubes*  
Workshop on "Electronic properties of mesoscopic systems"  
9-13 October 2000, Ascona, Switzerland

*Carbon nanotubes as molecular quantum wires*  
Bilateral Israel-Netherlands meeting  
Enschede, 23-25 October 2000

*Molecular electronics with carbon nanotubes and DNA?*  
DSM seminar  
Sittard, 30 November 2000

*Molecular electronics with carbon nanotubes and DNA?*  
General physics seminar, Ecole Normale Supérieure  
Paris, 7 December 2000

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## 2001

*DNA-based electronics*  
7th Melari/NID workshop  
Barcelona, 8 February 2001

*New research at the Molecular Biophysics group*  
Delft-Leiden toogdag  
Delft, 5 March 2001

*Molecular electronics with carbon nanotubes and DNA ?*  
Sanken Int. Symp. on Biological Molecular Machines and Biodevices  
Osaka, 14-16 maart 2001

*Electronic properties of carbon nanotubes*  
NTT Science Forum  
Tokyo, 2-3 April 2001

*Molecular electronics with carbon nanotubes and DNA ?*  
ACS conference on biological applications of nanotechnology  
Berkeley, June 3-6, 2001

*Nanotechnologie en biofysica*  
Workshop KNAW  
Amsterdam, 15 June 2001

*Single-molecule electronic transport with carbon nanotubes and DNA*  
Gordon conference on Condensed Matter Physics  
Connecticut, 18-21 June 2001

*Single-molecule electronic transport with carbon nanotubes and DNA*  
Leopoldina symposium on single molecule chemistry (Deutsche Akademie der Naturforscher), Wittemberg, June 21-23, 2001

*Recent transport and STM results on carbon nanotubes*  
Nanotube 2001  
Potsdam, 22-26 July 2001

*Single-molecule electronic transport with carbon nanotubes and DNA*  
Conference on Nanophysics and Bioelectronics  
Dresden, 20-24 August 2001

*Is DNA a well-conducting molecular wire?*

Int. Conf. on electronic interactions and electron dynamics in DNA  
Los Angeles, 8 September 2001

*Molecular electronics with carbon nanotubes and DNA ?*

BTG Nanotechnology workshop,  
London, 14 September

*Carbon nanotubes as a model system for molecular quantum wires and molecular electronics*

Symposium on the 10<sup>th</sup> Anniversary of the the discovery of carbon nanotubes  
Tsukuba, October 3-5

*DNA-based electronics*

EC workshop on DNA-based devices  
Stuttgart, 8 October

*Single-molecule electronics from nanotubes to DNA*

NWO pionier symposium  
Den Haag, 24 October

*The unique properties and potential of carbon nanotubes*

Mesa-plus annual day  
Hengelo, 30 October 2001

*Nanotechnologie: over DNA chips, nanobuisjes, en andere nano beloftes (en gevaren?)*

Studium generale TU Delft  
Delft, 21 November 2001

*Carbon nanotubes as molecular wires*

FOM Condensed Matter meeting, Plenary talk  
Veldhoven, 19 December

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**2002**

*On nanotechnology and carbon nanotubes*

Ehrenfest colloquium  
Leiden, 23 January

*Over fysica met een Utrechtse start*

H.W. deWijn symposium  
Utrecht, 1 February

*Carbon nanotubes: a model system for fundamental science and molecular electronics devices*

9th MEL-ARI/NID Workshop, plenary talk  
Catania, 7 February

*Nanotube transport and junctions*

9th MEL-ARI/NID Workshop  
Catania, 8 February

*DNA transport experiments*

9th MEL-ARI/NID Workshop  
Catania, 8 February



*Demonstrations of carbon nanotube based molecular devices and circuits*  
AAAS Nanoelectronics Session at the AAAS Nanotechnology Seminar  
Boston, 14 February

*On nanotechnology and carbon nanotubes*  
PION Physics Student Olympiad  
Delft, 3 April

*Carbon nanotubes as molecular quantum wires*  
EPS Condensed Matter Physics meeting, plenary talk  
Brighton, 11 April

*Single-molecule electronics with carbon nanotubes and DNA*  
Bionanotechnology  
Oxford, 12 April

*Single-molecule electronics with carbon nanotubes and DNA*  
Workshop on DNA-based molecular construction  
Jena, 24 May

*Possible applications of carbon nanotubes*  
DSM workshop on Nanotechnology  
Rolduc, 7 May

*Single-molecule electronics with carbon nanotubes and DNA*  
Trends in Nanotechnology TNT2002  
Santiago de Compostela, September 3

*Carbon Nanotube Transistor-Based Logic Circuits*  
10th Foresight Conference on Molecular Nanotechnology  
Maryland, October 11

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## 2003

*Nanotechnologie, fascinatie voor het kleine*  
Diesrede 2003, Dies Natalis TU Delft  
Delft, January 10

*DNA-based electronics*  
NID workshop  
Toulouse, 6 February

*Carbon nanotubes and solid-state nanopores as model systems for science and applications*  
CENS workshop "Current Issues of Nano-Bio-Science"  
Mauterndorf, 25 February

*Over nanotechnologie en koolstof nanobuisjes*  
Symposium de Leidsche Fles  
Leiden, 23 April

*Nanotechnologie: Meten aan enkele nanobuisjes, DNA moleculen, en nog veel meer*  
Fysica 2003, plenary talk  
Amsterdam, 25 April

*Carbon nanotubes as model systems for science and applications*  
Nanoscience and Technology Conference, plenary talk  
Groningen, 20 May

*Koolstof nanobuisjes: van nanoelektronica tot biosensors*  
Limburgs Universitair Centrum  
Diepenbeek, 29 May

*Playing with nano-toys in bio-wonderland*  
Casimir Workshop  
Egmond, 11 June

*Carbon nanotubes, nanostructures, and single biomolecules*  
Bionanotechnology EuroConference  
Granada, 12 July

*Carbon nanotubes as model systems for science and applications*  
TOP Nano 21, plenary talk  
St.Gallen, 10 September

*Nanotechnology*  
Medtronic Science and Technology Meeting  
Maastricht, 6 November

*Carbon nanotubes as model systems for nanoscience and bionanotechnology*  
Workshop on Soft Condensed Matter and Nanoscale Physics, keynote address  
Sydney, 2 December

*Carbon nanotubes as model systems for nanoscience and nanotechnology*  
First International NanoSystems Symposium at UCLA, plenary talk  
Los Angeles, 13 December

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## 2004

*Meten aan de moleculaire machinerie van de mens*  
Spinoza symposium  
The Hague, February 4

*Nanotechnologie: Het kleine is groots. Eén voor één meten aan nanobuisjes, DNA moleculen, en nog veel meer*  
CLD Studium Generale  
Delft, March 16

*STM Spectroscopy of Suspended Single-Wall Carbon Nanotubes*  
Foundations of Nanoscience: Self-Assembled Architectures and Devices, plenary talk  
Snowbird, 21-23 April 2004

*Carbon nanotubes: model systems for nanoscience and (bio)nanotechnology*  
Patent Office seminar  
Rijswijk, April 27

*Nanotechnologie*  
Hoftorenlezing, Ministry of Education  
The Hague, May 10

*Nanotechnologie: Het kleine is groots. Eén voor één meten aan nanobuisjes, DNA moleculen, en nog veel meer*  
Studium generale  
Utrecht, May 18

*Carbon nanotubes and DNA for new (bio)physics and applications*  
International Society for Nanoscale Science, Computation and Engineering, plenary talk  
Milan, June 11

*New tools from nanotechnology for elucidating the physics of single biomolecules*  
Hubrecht Laboratory seminar  
Utrecht, August 17

*Single-DNA translocation experiments*  
International Conference for Biological Physics, plenary lecture  
Göteborg, August 23-27

*Solid-state nanopores, a new fabrication route and translocation of dsDNA*  
Workshop on Electronic Recognition of DNA molecules, plenary talk  
Liege, September 1-3

*Translocation of dsDNA through solid-state nanopores*  
Annual meeting on Molecular and Cellular Biophysics  
Lunteren, September 27-28

*An introduction to nanotechnology in the biomedical world*  
Symposium 'Nanotopia, Small World, Big Hopes'  
Utrecht, September 16

*New tools from nanotechnology for elucidating the physics of single biomolecules*  
Cavendish Laboratory Biological and Soft Systems seminar  
Cambridge, October 29

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## 2005

*Solid-state nanopores, a new fabrication route and translocation of dsDNA*  
International Conference on the biophysics of single molecules, plenary talk  
Aspen, January 1-7

*Molecular Biophysics at the Kavli Institute of Nanoscience Delft*  
Seminar, MPI Dresden  
Dresden, January 26

*Nanostructures for kinesin-driven microtubule motility*  
Biomach meeting  
Madrid, February 2

*Translocation of dsDNA through solid-state nanopores*  
Nobel Symposium 131, Controlled nanoscale motion in biological and artificial systems, plenary talk  
Backaskog Slott, Sweden, June 13-17

*New tools from nanotechnology for elucidating the physics of single biomolecules*  
13th International Conference on Biopartitioning and Purification, plenary talk  
Rotterdam, June 21, plenary talk

*Translocation of dsDNA through solid-state nanopores*  
6<sup>th</sup> Annual Nanobiotechnology Symposium, plenary talk  
Cornell University, August 16

*Translocation of dsDNA through solid-state nanopores*  
Workshop on electronic recognition of biomolecules, plenary talk  
Urbana Champaign, September 6-9

*Nanotechnology for biologists*  
Kluyver colloquium  
Delft, September 16

*Nanoscience, from single-molecule science to applications*  
2005 IEEE International Ultrasonics Symposium, keynote address  
Rotterdam, September 19

*Nanostructures for biology, from molecules to molecular motors*  
International Conference From molecular switches to molecular motors, plenary talk  
Ascona, September 19-22

*Bionanoscience: Nanotechnologie voor de studie van structuur, dynamica en interacties van enkele biomoleculen*  
Voordracht, KNAW  
Amsterdam, September 26

*Nanotechnology: New tools for new science*  
Workshop Modern Tools for Materials Science, plenary talk  
Delft, 20-21 October 2005

*DNA dynamics in nanopores*  
International Conference on Biological Dynamics, plenary talk  
Amsterdam, November 8

*Nanoscience and nanotechnology, from single-molecule science to society*  
Honorary Ørsted lecture  
Copenhagen, November 22

*Nanotechnologie*  
Studium Generale, Universiteit Tilburg  
Tilburg, December 1

*Carbon nanotubes: Unique electronic properties and way beyond*  
International Conference on Micro and Nanotechnology 2005, plenary talk  
London, December 12 (Royal Society)

*Nanotechnology and nanoscience, from carbon nanotubes to single-molecule DNA biophysics*  
Frontier of Natural Sciences Lecture  
Imperial College London, December 12

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## 2006

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
Interdisciplinary Nanoscience Center, annual iNANO meeting, University of Aarhus, plenary talk  
Aarhus, January 18

*Force measurements on a DNA molecule that translocates a solid-state nanopore*  
APS March meeting, plenary talk  
Baltimore, March 13-17

*Translocation and force measurements of DNA molecules in solid-state nanopores*  
Single Molecule Biology conference, plenary talk  
Cambridge, March 26-29

*Translocation and force measurements of DNA molecules in solid-state nanopores*  
EPS/CMD general conference / DPG Frühjahrstagung, plenary talk  
Dresden, March 31

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
Montefiore award symposium  
Liege, March 21

*Nanotechnology for single-molecule biophysics*  
TUE Seminar  
Eindhoven, May 23

*Bionanoscience en -technologie*  
CBB KNAW meeting  
Amsterdam May 30

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
2006 Advanced Research Workshop Future Trends in Microelectronics: Up the Nano Creek, plenary talk  
Crete, June 25-27

*DNA translocation through solid state nanopores*  
ICN+T 2006 International Conference on Nanoscience and Technology, plenary talk  
Basel, August 2-4

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
Nano Korea 2007, plenary talk  
Seoul, August 31

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
KRICT Symposium on Chem Vision in Nanotechnology, plenary talk  
Daejeon, August 29

*DNA translocation through solid state nanopores*  
Kavli Seminar Caltech  
Pasadena, September 2

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Caltech seminar  
Pasadena September 3

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Philips seminar  
Eindhoven, September 20

*DNA translocation through solid state nanopores*  
Seminar University of Groningen  
Groningen, October 5

*Van  $10^{-9}$  tot  $\infty$*   
Studium Generale, TU Delft  
Delft, October 31

*Nanotechnologie*  
Vliegende Hollanders - Science & Technology Summit 2006  
Amsterdam, November 15

*Nanotechnologie*  
60 jaar FOM  
Scheveningen, November 20

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## 2007

*DNA translocation through solid-state nanopores*  
Croucher Advanced Study Institute on 'Nano Science and Technology - From Basic Science to Device Applications',  
Hong Kong University of Science and Technology, plenary lecture  
Hong Kong, January 9

*Nanoscience from carbon nanotubes to single-molecule biophysics*  
Croucher Advanced Study Institute on 'Nano Science and Technology - From Basic Science to Device Applications',  
Hong Kong University of Science and Technology, plenary lecture  
Hong Kong, January 10

*DNA translocation through solid-state nanopores*  
Physics@FOM 2007  
Veldhoven, January 24

*DNA translocation through solid-state nanopores*  
International Symposium on Biomolecular Nanoscale Assemblies  
Copenhagen, January 25

*RecA/hRad51-mediated homologous recombination studied with magnetic tweezers*  
Single Molecule Biophysics 2007 winter workshop  
Aspen, February 8

*Nanotechnology tools for biology, the power of single molecule biophysics*  
National seminar Dutch Cancer Institute NKI-AvL  
Amsterdam, April 13

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Belgian Physical Society and Belgian Biophysical Society joint meeting, plenary lecture  
Antwerp, May 30

*The merging of bio and nano – towards cyborg cells*  
Kavli Futures Symposium  
Illulissat, Greenland, June 12

*The versatility of nanotechnology tools for biology, from DNA repair mechanisms to sequencing applications*  
Amolf seminar  
Amsterdam, July 2

*Nanofabricated channels for biophysics experiments on kinesin and microtubules*  
Annual Dutch meeting on Molecular and Cellular Biophysics 2007  
Veldhoven, October 1

*Nanotechnology tools for biology, the power of single molecule biophysics*  
2007 International Institute for Nanotechnology Symposium, Northwestern University, keynote address  
Chicago, October 24

*Nanobioscience & -technology*  
NSA Symposium Nanotechnologie  
Amsterdam, October 30

*Nanotechnology tools for biology, the power of single molecule biophysics*  
KNCV congres Het Element  
Delft, November 8

*Nanotechnologie, van nanobuiselectronica tot de krullen in DNA*  
Nanotechnologiefestival Nano Nu  
Brussels, November 10

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Engineering Life Conference, plenary opening talk  
Dresden, December 3

*Nanotechnology tools for biology, the power of single molecule biophysics*  
University colloquium lecture series  
Leipzig December 4

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## 2008

*DNA translocation through solid-state nanopores*  
Grosses Kolloquium  
University of Köln, January 14

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Astbury Centre for Structural Molecular Biology seminar  
University of Leeds, January 17

*DNA translocation through nanopores*  
Kavli-EMBL Workshop  
Delft, February 13

*Nanotechnology tools for biology, the power of single-molecule biophysics*  
Erasmus University, seminar 'Frontier Science in the Netherlands'  
Rotterdam, March 5

*Nanotechnology for the life sciences*  
Life science and technology symposium on bio-imaging  
Leiden, March 6

*Nanotechnology tools for biology, the power of single molecule biophysics*  
Zurich Physics Colloquium  
ETH Zurich, May 14

*The power of single-molecule techniques for biophysics*

XXI Sitges Conference on the Statistical Mechanics of Biophysics, Plenary talk  
Sitges, June 4

*Biosensing with carbon nanotube transistors*

8th Annual Workshop on Carbon Nanostructures  
Beijing, June 11

*The power of single-molecule techniques for biophysics*

8th Annual Workshop on Carbon Nanostructures  
Changchun, June 13

*Single-molecule biophysics*

Workshop on the physics of micro and nano flows, keynote lecture  
Leiden University, June 19

*Solid state nanopores for single-molecule studies*

Weizmann Institute of Science, seminar  
Rehovot, June 30

*single-molecule biophysics*

Bar Ilan University, seminar  
Bar Ilan, July 1

*The power of single-molecule techniques for biophysics*

Russell Berrie Nanotechnology Institute Annual Lecture  
Technion, Haifa, July 2

*Solid-state nanopores for single-molecule biophysics*

Physics Meets Biology 2008, plenary lecture  
Oxford, July 15

*Solid state nanopores for translocation of DNA, RNA and proteins*

Gordon Research Conference on Single Molecule Approaches To Biology, invited lecture  
New London, August 20

*Solid-state nanopores and translocation processes*

Dynamics Days Europe 2008 conference, plenary talk  
Delft, August 27

*Nanobioscience & nanobiotechnology*

Interdepartementaal Overleg Biotechnologie over de Convergerende Technologieën  
Scheveningen, September 3

*Nanofabricated structures for analysis of single biomolecules*

Synthetic Biology Workshop  
Groningen, November 7

*Nanotechnologie, van nanobuiselectronica tot de krullen in DNA*

Studium Generale Erasmus University, Cool Science lezing  
Rotterdam, September 23

*Solid state nanopores for translocation of DNA, RNA and proteins*

EMBL seminar  
Heidelberg, November 21



*Nieuwe mogelijkheden voor wetenschap in de synthetische biologie*  
Royal Academy of Art and Sciences, plenary talk  
Amsterdam, November 24

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**2009**

*Solid state nanopores: A versatile tool for the study of polynucleotides and proteins*  
Single Molecule Biophysics 2009  
Aspen, January 9

*Solid state nanopores for single-molecule studies*  
Inaugural Nanobiology Seminar in the Biozentrum Basel  
Basel, January 27

*Controlled nanostructures as a tool to study biology*  
6th Dutch Soft Matter Meeting  
Delft, February 28

*Nanostructures for studying the physics of biomolecules and cells*  
Biophysical Society 53rd Annual Meeting  
Boston, March 3

*Nanostructures for studying the physics of single biomolecules and cells*  
Joint meeting of the Royal Academy of Sciences and the Young Academy of Sciences  
Amsterdam, March 28

*Solid state nanopores for single-molecule studies*  
Annual symposium of the Institute for Molecules and Materials, keynote lecture  
Nijmegen, May 19

*Solid state nanopores for detection of local structures along single DNA molecules*  
READNA Plenary meeting  
Berlin, July 6

*In vitro measurements of transport across a single biomimetic nuclear pore complex*  
2009 Mechanisms of Nuclear Transport Meeting  
Banff, Canada, August 25

*Nanotools for biology*  
7th Dutch Soft Matter Meeting  
Delft, September 27

*Solid state nanopores for nucleic acid analysis*  
Harvard University seminar  
Boston, October 13

*Single-molecule transport across solid-state nanopores and biomimetic nuclear pore complexes*  
University of Cambridge seminar  
Cambridge, October 22

*Single-molecule biophysics of chromatin maintenance*  
Epigenome Workshop on Nucleosome Dynamics  
Rotterdam, November 6

*Fysica, fascinatie en vergezichten rond synthetische biologie*  
Symposium 'Science of Fiction'  
Delft, November 24

*Biophysics and adaptation of bacteria in nanofabricated landscapes*  
Workshop on Evolution: Foundations, Fundamentals, and Disease  
Hong Kong, December 9

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## 2010

*Using nanostructures for biology at the single cell and single molecule level*  
Lorentz Center workshop on micro- and nanofluidics for cell biology  
Leiden, January 19

*Single-molecule techniques for cell biology*  
Medical Delta meeting  
LUMC Leiden, February 5

*Nanobiologie, nieuwe mogelijkheden op de grens van nano en bio*  
Science Café Leiden  
Leiden, March 16

*Nanotech tools for biology, the power of single-molecule biophysics*  
World Student Conference on Particle Technology  
Delft, April 23

*Squeezing bacteria in nanochannels*  
Biotec  
Dresden, May 3

*Nanotechnologie*  
Nanotopia  
Nijmegen, May 27

*Nanotechnologie, werken met de bouwstenen van de schepping*  
Nanocongres 'Kan de schepping beter? Grote vragen over kleine deeltjes'  
Utrecht, June 11

*Novel avenues opening up with solid state nanopores*  
2nd READNA Symposium on Advanced Nucleic Acid Analysis  
Oxford, July 8

*Single-molecule transport across an individual biomimetic nuclear pore complex*  
Second Workshop on the Nuclear Pore Complex  
Albuquerque, July 17

*Single-molecule translocation through solid-state nanopores*  
Biosensing with channels  
Ile de Berder, August 25

*Solid state nanopores for single molecule studies*  
Third International NanoBio Conference 2010  
Zurich, August 26

*Nanostructures for Addressing Single Biomolecules and Cells*  
Life Science Symposium 2010 on "Engineering Life"  
Lausanne, September 2

*Nanowetenschap*  
Studium Generale  
Delft, September 22

*Squeezing E. coli bacteria in nanochannels*  
Symposium on "DNA transfer and biofilms"  
Freiburg, October 11

*Nanotechnology*  
Elsevier Technologiedebat  
Den Haag, November 25

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## 2011

*Single-molecule Transport across an Individual Biomimetic Nuclear Pore Complex*  
Single Molecule Biophysics 2011  
Aspen, January 12

*Where nano meets bio*  
Kavli Futures Symposium on Nanoscience  
Caltech, January 15

*Single-molecule translocation through solid-state nanopores*  
International Symposium on Advanced Science and Technology for Single Molecular Analysis of DNA and related molecules  
Kyoto, January 25

*The mechanics of homology recognition in recombination disentangled using dual molecule manipulation*  
Keystone Symposium on DNA Replication and Recombination  
Keystone, February 28

*Solid state nanopores for single-biomolecule studies*  
Seminar School of Nanoscience and Nanoengineering, University of North Carolina Greensboro North Carolina,  
March 4

*In vitro measurements of single-molecule transport across an individual biomimetic nuclear pore complex*  
Biophysical Society Meeting  
Baltimore, March 9

*Science at the interface of nanotechnology and biology*  
Flanders Academy of Sciences  
Brussels, March 23

*Solid state nanopores for single-biomolecule studies*  
IMEC seminar  
Leuven, May 20

*Bacterial cell division studied in synthetic cell shapes*  
First EuroSYNBIO Conference  
Cannes, May 26

*Bionanoscience*

ICFO

Barcelona, June 16

*A fast, accurate typing system*

READNA plenary meeting

Sandhamn, June 30

*Bacterial antibiotic resistance in confined space*

NanoNext-NanoLoc meeting

Utrecht, July 5

*Single-molecule transport across an individual biomimetic nuclear pore complex*

EMBO Workshop on Mechanisms of Nucleocytoplasmic Trafficking

Jerusalem, November 7

*Single-molecule transport across an individual biomimetic nuclear pore complex*

Workshop Controlled molecular sensing using nanopores

London, December 14

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**2012**

*Using nanostructures for biology at the single cell and single molecule level*

Lab-on-a-Chip workshop: Reaching new horizons with nanotechnology

Gothenburg, February 2

*The versatility of solid state nanopores*

2012 Zing Nanopore Conference

Lanzarote, February 9

*Single-molecule transport across an individual biomimetic nuclear pore complex*

56<sup>th</sup> Annual Meeting of the Biophysical Society

San Diego, February 25

*Translocation of biomolecules through solid state nanopores*

56<sup>th</sup> Annual Meeting of the Biophysical Society

San Diego, February 29

*Single-molecule transport across an individual biomimetic nuclear pore complex*

March Meeting of the American Physical Society

Boston, March 1

*What is life?*

Spinoza te paard

The Hague, March 20

*Solid state nanopores for single-biomolecule studies*

Workshop Forces in Biomolecular Systems

Venice, March 26

*Using the toolbox of nanotechnology for single-molecule biophysics*

9<sup>th</sup> Annual Conference on the Foundations of Nanoscience

Snowbird, April 18

*Human enhancement, a critical reflection*  
CEC Consultation on Human Enhancement  
Brussel, April 25

*Using the toolbox of nanotechnology for single-molecule biophysics*  
Fysica-Chemie 2012  
Enschede, May 30

*Single-molecule translocation through solid-state nanopores*  
CECAM workshop on DNA sequencing and detection with nanopores  
Pisa, June 11

*Using the toolbox of nanotechnology for single-molecule biophysics*  
Vienna Biocenter seminar  
Vienna, July 12

*Dynamics of DNA supercoils*  
Workshop on DNA reactions and DNA/chromosome dynamics  
Woodshole, September 10

*Single molecule investigations with solid-state nanopores*  
3<sup>rd</sup> READNA Symposium on Advanced Nucleic Acid Analysis  
Barcelona, September 27

*What sets the dividing plane in E. coli bacteria?*  
Workshop Synthetic Biology: Engineering Complex Biological Systems  
Groningen, October 4

*Using the toolbox of nanotechnology for single-molecule biophysics*  
Physics colloquium  
Eindhoven, November 15

*Dynamics of DNA supercoils*  
Single Molecule Biophysics Conference 2013  
Aspen, January 9

*Nanobiologie: nieuwe wetenschappelijke vragen, implicaties voor de grote vragen*  
Opening symposium of the Abraham Kuyper Center  
VU Amsterdam, February 22

*Dynamics of DNA supercoils*  
Workshop Physics of the Genome  
Amsterdam, March 14

*Cell division and Min oscillations in arbitrarily shaped E. coli bacteria*  
EuroSynBio meeting on Synthetic Biology: Engineering Complex Biological Systems  
Elmau, May 7

*Solid-state nanopores for single-molecule detection*  
Swiss Nanoconvention 2013, keynote address  
Basel, May 23

*Addressing biological complexity with nanostructures*  
Kavli Nexus on Nanoscience  
Puerto Rico, May 29

*A variety of solid-state nanopores for single-molecule analysis*  
Nordita workshop on Novel approaches to DNA sequencing  
Stockholm, June 14

*The appeal of single-molecule and single-cell studies*  
Diffusion Fundamentals V, keynote address  
Leipzig, August 26

*Addressing biological complexity with nanostructures*  
CENS Workshop Nanosciences, Great Adventures on Small Scales  
Venice, September 16

*Exploring biophysics of bacteria that exhibit nanofabricated shapes*  
NCMLS workshop New Frontiers in Synthetic Life  
Nijmegen, November 11

*Solid-state nanopores, from graphene to DNA origami and beyond*  
International Symposium on Single Biomolecule Analysis 2013  
Kyoto, November 22

*Why would a biologist ever be interested in nanotechnology?*  
Hubrecht Institute CSD Masterclass 2013  
Doornwerth, December 12

## **List of supervised PhD students**

Wöltgens, P.J.M.

University of Utrecht

Nationality: Dutch

Year of PhD-degree: 1993

Title dissertation: Vortex-glass dynamics in high-Tc superconducting films

Current position: Senior Principal Architect, ASML

Liefrink, F.

University of Utrecht

Nationality: Dutch

Year of PhD-degree: 1993

Title dissertation: Noise spectroscopy of semiconductor nanostructures

Current position: Examiner, European patent office

Tans, S.J.

TU Delft

Nationality: Dutch

Year of PhD-degree: 1998

Title dissertation: Electron transport in single molecular wires

Current position: Full professor Amolf, Amsterdam

Mantel, O.C.

TU Delft

Nationality: Dutch

Year of PhD-degree: 1999

Title dissertation: Mesoscopic charge density wave wires

Current position: Consultant, TNO

Venema, L.C.

TU Delft

Nationality: Dutch

Year of PhD-degree: 2000

Title dissertation: Electronic structure of carbon nanotubes

Current position: Senior editor, Nature London

Postma, H.W.Ch.

TU Delft

Nationality: Dutch

Year of PhD-degree: 2001

Title dissertation: Carbon nanotube functions and devices

Current position: Associate Professor, California State University Northridge

Storm, A.J.

TU Delft

Nationality: Dutch

Year of PhD-degree: 2004

Title dissertation: Single molecule experiments on DNA with novel nanostructures

Current position: Lead scientist, TNO

Janssen, J.W.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2001  
Title dissertation: Spatially resolved spectroscopy on carbon nanotubes  
Current position: Managing director, Regiegroep Life Sciences & Health

Van der Heyden, F.H.J.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2006  
Title dissertation: Pressure Driven Transport in Nanofluidic Channels  
Current position: EOR Engineer, Shell

Besteman, K.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2006  
Title dissertation: Charge inversion and DNA condensation by multivalent ions  
Current position: Consultant, Roland Berger Strategy Consultants

Koster, D.A.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2007  
Title dissertation: Topoisomerase and the unwinding of stressed DNA  
Current position: Assistant Professor, Hebrew University

Van den Heuvel, M.G.L.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2007  
Title dissertation: Exploiting and exploring microtubules and kinesin motor proteins in nanofabricated devices  
Current position: Project Leader, The Boston Consulting Group

Van der Heijden, A.H.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2007  
Title dissertation: Dynamic protein assemblies in homologous recombination with single DNA molecules  
Current position: Researcher/Entrepreneur, Boston

Smeets, R.M.M.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2008  
Title dissertation: DNA and ion transport through solid-state nanopores  
Current position: Organizational advisor, Turner

Wiertz, F.G.M.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2008  
Title dissertation: Electron Transfer and Proton Pumping Pathways in Cytochrome  $aa_3$   
Current position: Project leader, Groen Agro Control



Heller, I.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2009  
Title dissertation: Electrostatic sensing and electrochemistry with single carbon nanotubes  
Current position: Postdoc, VU University Amsterdam

Van den Hout, M.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2010  
Title dissertation: Forcing DNA and RNA through artificial nanopores  
Current position: Project Manager, Stork

Kowalczyk, S.W.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2011  
Title dissertation: Solid-state nanopores for scanning single molecules and mimicking biology  
Current position: Patent examiner, European patent office

Loenhout, M.T.J.  
TU Delft  
Nationality: Dutch  
Year of PhD-degree: 2012  
Title dissertation: Single-molecule studies of the twisted, knotted, and broken genome  
Current position: Postdoc, University of Vancouver

### **Current PhD students:**

Hol, F.J.H.  
Nationality: Dutch  
Expected year of PhD-degree: 2014

Hoogeboom-Vlijm, R.  
Nationality: Dutch  
Expected year of PhD-degree: 2014

Wu, F.  
Nationality: Chinese  
Expected year of PhD-degree: 2014

Plesa, C.  
Nationality: Canadian  
Expected year of PhD-degree: 2014

Wiktor, J.M.  
Nationality: Polish  
Expected year of PhD-degree: 2016

Ananth, A.N.  
Nationality: Indian  
Expected year of PhD-degree: 2016

Heerema, S.J.  
Nationality: Dutch  
Expected year of PhD-degree: 2017

Daniel Verschueren  
Nationality: Dutch  
Expected year of PhD-degree: 2017

Jorine Eeftens  
Nationality: Dutch  
Expected year of PhD-degree: 2017

### **List of supervised postdoctoral fellows and visiting professors**

Van der Zant, H.S.J.  
Nationality: Dutch  
Period: 1995-1998  
Current position: Full professor, TU Delft

Devoret, M.H.  
Nationality: French  
Period: 1995  
Current position: Full professor, Yale University

Bezryadin, A.  
Nationality: Russian  
Period 1995-1997  
Current position: Full professor, University of Illinois

Yao, Z.  
Nationality: Chinese  
Period: 1997-2000  
Current position: Associate Professor, University of Austin

Porath, D.  
Nationality: Israeli  
Period: 1997-2000  
Current position: Professor, Hebrew University

Wildoer, J.W.G.  
Nationality: Dutch  
Period: 1998-1999  
Current position: Manager, NXP Semiconductors

Dunn, A.W.  
Nationality: British  
Period: 1998-2000  
Current position: Financial sector, London

Lemay, S.G.  
Nationality: Canadian  
Period: 1998-2001  
Current position: Full professor, University of Twente

Mantel, O.C.  
Nationality: Dutch  
Period: 1999  
Current position: Consultant, TNO

Tans, S.J.  
Nationality: Dutch  
Period: 1999-2001  
Current position: Full professor TU Delft, AMOLF

Bachtold, A.  
Nationality: French  
Period: 2000-2001  
Current position: Professor, ICFO Spain

Van Noort, J.  
Nationality: Dutch  
Period: 2000-2003  
Current position: Associate Professor, Leiden University

Van Brederode, M.E.  
Nationality: Dutch  
Period: 2001-2003  
Current position: chemistry teacher

Williams, K.A.  
Nationality: American  
Period: 2001-2004  
Current position: Program Manager and CTO based at Naval Research Laboratory & Visiting Professor University of Virginia

Lee, J.O.  
Nationality: Korean  
Period: 2001-2002  
Current position: principal researcher, Korea Research Institute of Chemical Technology

Gaudin, G.  
Nationality: French  
Period: 2002  
Current position: Researcher, Spintec Grenoble

Postma, H.W.C.  
Nationality: Dutch  
Period: 2002  
Current position: Associate Professor, California State University Northridge

Ling, X.S.  
Nationality: American  
Period: 2003  
Current position: Full professor, University of Brown

Lientschnig, G.  
Nationality: Austrian  
Period: 2003  
Current position: University Assistant, Vienna University of Technology

Leroy, B.J.  
Nationality: American  
Period: 2003-2006  
Current position: Associate Professor, University of Arizona

Moreno Herrero, F.  
Nationality: Spanish  
Period: 2003-2006  
Current position: Associate Professor, National Center of Biotechnology, CSIC, Madrid

Seidel, R.  
Nationality: German  
Period: 2003-2006  
Current position: Assistant Professor, University of Münster

Kong, J.  
Nationality: Chinese  
Period: 2003-2004  
Current position: Associate professor, MIT

Keyser, U.F.  
Nationality: German  
Period: 2003-2006  
Current position: Associate Professor, University of Cambridge

Stein, D.M.  
Nationality: Canadian  
Period: 2003-2006  
Current position: Associate Professor, Brown University

Storm, A.J.  
Nationality: Dutch  
Period: 2004  
Current position: Lead scientist, TNO

Dujovne, I.  
Nationality: Argentinian  
Period: 2004-2007  
Current position: Research Scientist, University Massachusetts

Meyer, C.  
Nationality: German  
Period: 2005-2008  
Current position: Group leader, SEW company

Heering, H.A.  
Nationality: Dutch  
Period: 2005-2009  
Current position: Assistant Professor, University of Leiden

Minot, E.D.  
Nationality: UK  
Period: 2006  
Current position: Associate Professor, Oregon State University

Krapf, D.  
Nationality: Argentinian  
Period: 2006-2007  
Current position: Assistant Professor, Colorado State University

Hoeben, F.J.M.  
Nationality: Dutch  
Period: 2006-2008  
Current position: Scientist, Symo-Chem

Besteman, K.  
Nationality: Dutch  
Period: 2007  
Current position: Consultant, Roland Berger Strategy Consultants

Van der Heyden, F.H.J.  
Nationality: Dutch  
Period: 2007  
Current position: Research engineer, Shell

Hall, A.R.  
Nationality: American  
Period: 2007-2010  
Current position: Assistant professor, Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences

Van der Heijden, A.H.  
Nationality: Dutch  
Period: 2008  
Current position: Entrepreneur, Boston

Koster, D.A.  
Nationality: Dutch  
Period: 2008  
Current position: Assistant Professor, Hebrew University

Van den Heuvel, M.G.L.  
Nationality: Dutch  
Period: 2008  
Current position: Consultant, Boston Consulting Group

Mannik, J.  
Nationality: Estonian  
Period: 2008-2011  
Current position: Assistant Professor, University of Tennessee, Knoxville

Galajda, P.J.  
Nationality: Hungarian  
Period: 2008-2010  
Current position: Assistant Professor, Hungarian Academy of Sciences

Smeets, R.M.M.  
Nationality: Dutch  
Period: 2008  
Current position: Consultant, Turner

Schneider, G.F.  
Nationality: French  
Period: 2009-2013  
Current position: Assistant Professor, TU Delft

De Vlaminck, I.  
Nationality: Belgian  
Period: 2009-2012  
Current position: Postdoctoral researcher, Stanford University

Heller, I.  
Nationality: Dutch  
Period: 2010  
Current position: Postdoc, VU University Amsterdam

Snippert, H.J.G.  
Nationality: Dutch  
Period: 2011-2012  
Current position: Assistant Professor, AZU, University of Utrecht

Kowalczyk, S.W.  
Nationality: Polish/Dutch  
Period: 2012  
Current position: Patent examiner, European Patent Office

Blosser, T.  
Nationality: American  
Period: 2011-2013  
Current position: Postdoc, TU Delft

Hermesen, R.  
Nationality: Dutch  
Period: 2012-2013  
Current position: Assistant Professor, University of Utrecht

**Current postdocs:**

1. Burnham, D.R. British
2. Caspi, Y. Israeli
3. Deshande, S. Indian
4. Jonsson, P.M. Swedish
5. Katan, A.J. Dutch
6. Mashaghi, A. Iranian
7. Soni, G.V. Indian