

D.C. (Kitty) Nijmeijer
Full Professor
Membrane Materials and Processes
Department of Chemical Engineering and Chemistry
Eindhoven University of Technology
The Netherlands
Email: D.C.Nijmeijer@tue.nl



Research profile

With over 15 years of experience in the field of polymer membrane design, characterization and application, Kitty Nijmeijer leads the research group Membrane Materials and Processes that focuses on design and development of polymer membranes to separate molecular mixtures for sustainable processes. Her research expertise focuses on the fundamentals of membrane chemistry and morphology to control mass transport in macroscopic applications. It combines and integrates material science and process technology. Water and Energy are the main application areas with a strong focus on recovery and reuse of resources, the valorization of waste streams and energy efficient processes in the context of a sustainable circular economy.

Information about the Membrane Materials and Processes Group can be found at www.tue.nl/mmp

PROFESSIONAL EXPERIENCE

02/16-today

Full professor and chair research group Membrane Materials and Processes, Eindhoven University of Technology
Expertise: Molecular membrane design to control mass transport in sustainable process applications

04/18-today

Vice-dean of the department of Chemical Engineering and Chemistry Eindhoven University of Technology

09/15-03/16

Full professor and head research group Membrane Science & Technology, University of Twente, Enschede, The Netherlands

Expertise: Membrane technology for Energy and Water Applications

10/12-08/15

Adjunct professor and head research group Membrane Science & Technology, University of Twente, Enschede, The Netherlands

Chair: Membrane Science and Technology

Expertise: Membrane technology for Energy and Water Applications

01/11-09/12

Associate Professor and head research group Membrane Science & Technology, University of Twente, Enschede, The Netherlands

Field of expertise: Membrane Science and Technology for Energy and Sustainable Process Applications

07/10-08/10

Visiting Scientist University of California, Berkeley (USA), Department of Chemistry and Department of Chemical and Biomolecular Engineering

Prof. J. Long (<http://alchemy.cchem.berkeley.edu/index.html>)

Prof. B. Smit (<http://www.cchem.berkeley.edu/molsim/drupal>)

Design of molecular organic framework (MOF) - polymer architectures

03/07-08/07

Invited senior scientist Shell Research & Technology Center Amsterdam (SRTCA)

Confidential contract research

10/06-12/10

Assistant Professor Membrane Technology Group, University of Twente, Enschede, The Netherlands

Field of expertise: Membrane Science and Technology for Energy Applications

12/04-09/06

Research director European Membrane Institute Twente, University of Twente, Enschede, The Netherlands

The European Membrane Institute Twente performs confidential contract research for the industry and facilitates knowledge transfer and valorization in the field of Membrane Science and Technology. Due to the confidential nature of the projects, results have not been published in open literature.

03/03-11/04

Post doc/Researcher Membrane Technology Group, University of Twente, Enschede, The Netherlands
Research topics: Direct Methanol Fuel Cells, Mixed Matrix Membranes

EDUCATION

10/98-05/03

PhD student Membrane Technology Group, University of Twente, Enschede, The Netherlands
Research topic: Gas-liquid membrane contactors for olefin/paraffin separation (promotor: Prof. dr. -Ing. M. Wessling).

09/95-09/98

Master Chemical Technology University of Twente, Enschede, The Netherlands

09/91-09/95

Bachelor Chemical Technology Hogeschool Heerlen, Heerlen, The Netherlands

PERSONAL GRANTS

2018 - START-UP grant NWO intended for recently appointed professors, associate professors, and assistant professors in physics and chemistry and gives new principal investigators (PIs) the opportunity to refine their creative, high-risk ideas, to establish a basis for future research themes, and/or to generate scientific innovations. (k€ 660.000).

2011 - Aspasia grant Dutch Science Foundation NWO (k€ 200.000)

2008 - Personal grant for scientific career development from UT stimuleringsfonds (k€ 10.000)

2006 - Personal research fund (Meervoud) of the Dutch Science Foundation (NWO). Project title: Functionalized Membranes for Sustainable Process Applications (k€ 200.000)

AWARDS

2018 - Winner Academic Society Award of the Dutch Royal Institute of Engineers (KIVI). Professors who distinguish themselves through excellent research and their ability to make the connection between science and society in an appealing way are considered for the KIVI Academic Society Award that is presented annually during the Day of the Engineer.

2010 - Prof. de Winter prize University of Twente for the best publication in 2009/2010 for female top talent

2008 - Education award of the Faculty of Science and Technology/Chemical Technology (University of Twente)

SCIENTIFIC BOARDS (Selection)

01/17-04/18 - Chair Interdepartmental Selection Committee Engineering for scientific staff of the TU/e (Voorzitter IFB Engineering = Voorzitter Interfacultaire Benoemings Adviescommissie Engineering)

03/15-today - Selected Editorial Board Member - Board of Reviewing Editors of the scientific journal Science

01/15-01/17 - Scientific Director and President Academic Advisory Board of the Institute for Sustainable Process Technology (ISPT)

01/14-12/14 - Member Academic Advisory Board Institute for Sustainable Process Technology (ISPT)

11/12-01/14 - Member Program Council TKI Water Technology

01/13-today - Editorial board member Journal of Membranes and Separation Technology (international, peer-reviewed, open access journal)

01/12-today - Editorial board member Journal of Membrane Science (the leading journal in the field of membrane science and technology)

01/11-today - Editorial board member international and interdisciplinary peer-reviewed, open access journal Membranes

03/10-01/14 - Research School Process Technology (OSPT) Board member of the Education Committee

01/10-01/13 - Council member of the KNCV section Macromolecules

01/09-01/13 - Elected council member and vice president of the European Membrane Society (EMS)

2008-2011 - Chairwoman of the ICOM 2011 meeting in Amsterdam (International Conference on Membranes and Membrane Processes; ~ 1000 participants)

08/07-12/11 - Member and chairwoman (since 01/09) of the Institute Council of the scientific research institute IMPACT of the University of Twente

09/04-02/16 - Board member of the European Membrane House (legal continuation of the European Network of Excellence (NoE) NanoMemPro)

EDUCATIONAL BOARDS

04/13-12/15 - Chair women educational committee Chemical Engineering/track Water Technology

REVIEW RESPONSIBILITIES

Reviewer for e.g. JMS, Science, Polymer, EES, ES&T, Macromolecules, Renewable Energy, Polymers, Chemical Reviews, Journal of Applied Polymer Science, European Polymer Journal, Advanced Materials, European Polymer Journal, Journal of Polymer Science: Polymer Physics, Desalination, Separation Science and Technology, International Journal of Hydrogen Energy, Ionics, Journal of Chemical Technology and Biotechnology, Chemical Physics Letters, Nature

KNOWLEDGE DISSEMINATION, OUTREACH AND MEDIA (SELECTION)

Since the start of my academic career I had multiple interviews on radio, television and in written media (type e.g. 'Kitty Nijmeijer' in Google). Below I list only the most extraordinary ones.

June 2018 - De Wereld van Morgen https://www.npostart.nl/de-wereld-van-morgen/13-06-2018/AT_2099359 at 28'33"

2018 - TEDx Amstelveen talk: 'Useful from useless': https://youtu.be/6F64nC6M_XANov.

2017 - Speaker at the 'Science Gala' (Gala van de Wetenschap) organized by the New Scientist in the National Theatre of Amsterdam: <https://newscientist.nl/nieuws/het-gala-van-de-wetenschap-2017-biedt-hoop-in-donkere-tijden/>

Nov. 2017 - Tijd voor Max: 'Hoe veilig is ons drinkwater eigenlijk?': http://www.uitzendinggemist.net/aflevering/414631/Tijd_Voor_Max.html, 341.000 views.

Nov. 2017 - Volkskrant: 'CO2 moet je gebruiken, niet opslaan': <https://www.volkskrant.nl/opinie/kitty-nijmeijer-co2-moet-je-gebruiken-niet-opslaan~a4539534/>

Nov. 2017 - Guest in the leading Dutch television program 'De Wereld Draait Door': 'Woord van het jaar': <https://dewerelddraaitdoor.bnnvara.nl/media/378936>, 1,412,000 views

Oct. 2017 - Speaker at the 'Evening of Chemistry' (Avond van de Chemie) of the Royal Dutch Society of Chemistry (KNCV), Flint Theatre Amersfoort, <https://www.kncv.nl/k/n2322/news/view/125678/124242/sfeerimpressie-avond-van-de-chemie-2017.html> and <https://www.flickr.com/photos/133745586@N03/sets/72157686370885032/>

April 2017 - Interview in Technisch Weekblad <https://www.technischweekblad.nl/nieuws/van-monomeer-tot-toepassing/item10228>

Nov. 2016 Guest in the leading Dutch television program 'De Wereld Draait Door' De Wereld Draait Door: 'Woord van het jaar': <http://dewerelddraaitdoor.vara.nl/media/366369>, 1,500,000 views

2016 - TEDx Enschede talk: 'Clean water for everyone' <https://www.youtube.com/watch?v=yArek-J5t5EDec>.

2015 - Science Café Enschede, Theatre Concordia, Enschede, The Netherlands, Blauwe Energie, <https://www.concordia.nl/detail/9003/science-cafe-blauwe-energie-science-cafe-enschede2015>

June 2015 - At the invitation of His Royal Highness King Willem Alexander and Her Royal Highness Queen Maxima, participation in the Symposium and discussion on 'Energy. How to supply the world's growing population with adequate energy in a sustainable fashion?'

2015 - Selected as most interesting technologist in category 'Green Tech' of the weekly magazine Vrij Nederland

2015-today - Ambassador VNCI (Association of the Dutch Chemical Industry)

2015 - Interview for C2W of the KNCV (Royal Dutch Chemistry Association) <http://www.c2w.nl/begrijpbare-kost-die-membranen.408922.lynkx>

Nov. 2015 - Guest in the leading Dutch television program 'De Wereld DraaitDoor': 'Weg met dat woord': (<http://dewerelddraaitdoor.vara.nl/media/349812>, 1,500,000 views)

Aug. 2015 - MañanaMañana festival, 28-30 August 2015, Hummelo, The Netherlands, 'Water voor Energie': <http://www.mananamanaana.eu/category/manana-manana-2015/>

March 2015 - Guest in the leading Dutch television program 'De Wereld DraaitDoor': 'De mooiste formules': (<http://dewerelddraaitdoor.vara.nl/media/336350>, 1,500,000 views)

2015 - Mini-lecture Blue Energy University of Twente (<http://www.utwente.nl/nieuwsevents/!/2015/2/49741/minicolleges-toekomstige-energieoplossingen>)

2015 - 5x15 minutes lecture series on membranes for the prestigious 'Universiteit van Nederland' (<http://www.universiteitvannederland.nl>) Jan.

2015 - Guest in the Dutch television program 'Het klokhuis' and SchoolTV (for children aged 8-12), <https://www.hetklokhuis.nl/tv-uitzending/2861/Blauwe%20energie>, <https://www.hetklokhuis.nl/tv-uitzending/3641/Blauwe%20energie> and <https://www.schooltv.nl/video/het-klokhuis-blauwe-energie/>

2014 - Official opening Blue Energy plant at the Afsluitdijk by the King of The Netherlands, November 26, 2014

2014 - Opening lecture information days University of Twente (2 x 2500 attendees), Enschede, The Netherlands.

April 2014 - Guest in the leading Dutch television program 'De Wereld DraaitDoor': 'Aantal scheikundestudenten stijgt sterk': <http://dewerelddraaitdoor.vara.nl/media/313756>, 1,500,000 views

Feb. 2014 - Science Café Deventer, Burger Weeshuis, Deventer, The Netherlands: Filters voor een duurzame wereld: <http://www.sciencecafedeventer.nl/2014/filters-voor-een-duurzame-wereld/>

VALORIZATION

2014 - Scale up of Blue Energy Technology and construction of pilot plant at the Afsluitdijk, The Netherlands

2013 - Scale up of production of membranes for water vapor recovery in powerplants

01/10 - NWO valorization grant phase I spin-off company NovaFiltr (Membranes for CO₂ capture applications)

09/09-01/11 - Scientific advisor spin-off company NovaFiltr (Membranes for CO₂ capture applications)

For publications see research output