

LISTINGS & OUTPUT 2025

Preface

The annual DIFFER Listings & Output document provides a comprehensive overview of the most significant outputs from our institute.

It includes the following:

PhD, and MSc theses; Publications in peer-reviewed scientific journals, other journals, and conference proceedings, and open software; Contributions by our members as guest lecturers at conferences, meetings, and seminars; Posters, presentations and other talks; Summaries of key positions held by our staff, including editorships; Media appearances of our staff and institute.

The output is categorized according to our two primary research lines: Fusion Energy and Chemical Energy, with the output from our Facilities & Instrumentation department listed separately.

For interviews, news, and updates, visit: www.differ.nl

For annual reports, appendices, and this document, visit: <http://www.differ.nl/about-us/annual-reports>

Cover image

Inside view into the vacuum transfer line of the facility PLD4Energy for thin film deposition and in-situ characterization. Samples and wafers of diverse shapes and sizes (up to 4 inch) mounted on a dedicated carrier can be transferred in the vacuum transfer line to the different deposition chambers and in-situ diagnostics.

DIFFER/Bart van Overbeeke Fotografie

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1. Scientific Output DIFFER: Fusion Energy 2025

PhD theses: 5

1. T.O.S.J. Bosman, *Density profile and heat-exhaust control in nuclear fusion devices: Development of control methods in view of the operation of fusion power plants*, PhD thesis at the Eindhoven University of Technology, 2025/04/30, Promotor(s): M.R. de Baar; Co-promotor: M. van Berkel
2. J.G.A. Scholte, *The viability of liquid metals as a plasma-facing material in nuclear fusion devices*, PhD thesis at the Eindhoven University of Technology, 2025/06/03, Promotor(s): T.W. Morgan, N.J. Lopes Cardozo
3. M. Morbey, *Deuterium dynamics in lithium layers: Retention and release under fusion relevant plasmas*, PhD thesis at the Eindhoven University of Technology, 2025/07/09, Promotor(s): T.W. Morgan, N.J. Lopes Cardozo; Co-promotor: B. Tyburska-Pueschel
4. S. Wang, *Hydrogen uptake in extreme ultraviolet mirrors*, PhD thesis at the Eindhoven University of Technology, 2025/10/09, Promotor(s): T.W. Morgan; Co-promotor: S. Tao
5. P. Mulholland, *Effect of high plasma pressure on instabilities and turbulence in nuclear fusion devices with three-dimension geometry*, PhD thesis at the Eindhoven University of Technology, 2025/10/15, Promotor(s): R.J.E. Jaspers; Co-promotor: J.H.E. Proll, M.J. Pueschel

Master thesis reports: 10

1. M. de Beij, (Master thesis Eindhoven University of Technology:) *Real-time density profile estimation at WEST*, Mentor(s): C.A. Orrico, M.R. de Baar, 2025/02/13
2. L.J. Bouwmeester, (Master thesis Eindhoven University of Technology:) *Investigations on W deposits created by sputtering in Magnum-PSI*, Mentor(s): T.W. Morgan, 2025/03/11
3. K.C.F. Koolen, (Master thesis Eindhoven University of Technology:) *Plasma microturbulence suppression based on electron cyclotron resonant heating*, Mentor(s): M.J. Pueschel, 2025/03/26
4. A. Kharrat, (Master thesis Eindhoven University of Technology:) *Development of an electron density profile observer for the DIII-D tokamak*, Mentor(s): M.R. de Baar, 2025/06/24
5. L. Ottink, (Master thesis Eindhoven University of Technology:) *The impact of currents on microinstabilities in fusion plasmas*, Mentor(s): M.J. Pueschel, T. Jitsuk, 2025/06/25
6. D.L.C. Becker, (Master thesis Eindhoven University of Technology:) *Investigating the use of Solid-State Radio Frequency Sources for Electron Cyclotron Resonance Heating in Nuclear Fusion*, Mentor(s): M. van Berkel, E. Westerhof, 2025/08/18
7. L.J.F. Hol, (Master thesis Eindhoven University of Technology:) *Geometry dependence of kinetic ballooning modes in the H-mode tokamak pedestal*, Mentor(s): M.J. Pueschel, 2025/08/27
8. B. Schocket-Greene, (Master thesis Eindhoven University of Technology:) *Analysis of particle transport through periodic perturbations in JET DT plasmas*, Mentor(s): M. van Berkel, 2025/08/28
9. R.R.M. Hazelhof, (Master thesis Eindhoven University of Technology:) *Stochastic parameter optimization of a scrape-off-layer model*, Mentor(s): G. Derks, 2025/09/13
10. L. Biscu, (Master thesis Politecnico di Torino:) *Probing transport via modulated electron cyclotron deposition in gyrokinetic turbulence simulations*, Mentor(s): M.J. Pueschel, 2025/11/26

Publications in peer-reviewed scientific journals: 54

1. P. Mulholland, M.J. Pueschel, J.H.E. Proll, K. Aleynikova, B.J. Faber, P.W. Terry, C. Hegna, C. Nührenberg, *Finite-beta turbulence in Wendelstein 7-X enhanced by sub-threshold kinetic ballooning modes*, Nucl. Fusion 65 (2025) 016022
2. M.J.H. Cornelissen, J. Vernimmen, J.D.E. Verstappen, E. Zoethout, I.G.J. Classen, J. Beckers, T.W. Morgan, *Erosion enhancement by impurity entrainment in the highly collisional plasmas of Magnum-PSI*, Nucl. Fusion 65 (2025) 026009
3. M.J.H. Cornelissen, B. Tyburska-Pueschel, M. Rasinski, S. Brons, E. Zoethout, D. Dorow-Gerspach, S. Brezinsek, M. Wirtz, G. Pintsuk, T.W. Morgan, J. Beckers, *High erosion and re-deposition rates of tungsten in the highly collisional plasmas of Magnum-PSI*, Nucl. Fusion 65 (2025) 026008
4. D. Mazon, G. Vayakis, M. Walsh, G. Yun, S.H. Hong, M.R. de Baar, T.C. Blanken, T.O.S.J. Bosman, B.F.H. van den Boorn, C.A. Orrico, B.J. Peterson, M.H. Aumeunier, A. Bultel, C. Klepper, D. Rasmussen, et al., ASDEX Upgrade team, WEST team, *Diagnostics: Chapter 8 of the special issue: on the path to tokamak burning plasma operation*, Nucl. Fusion 65 (2025) 113001
5. T.O.S.J. Bosman, M. Bernert, L. Ceelen, B. Sieglin, J.T.W. Koenders, T. Ravensbergen, O. Kudlacek, P. Fox, D. Brida, M. van Berkel, H. Reimerdes, C.G. Lowry, M. Lennholm, L. Piron, H.J. Sun, P. Jacquet, K. Kirov, N. Vianello, C. Ashe, A. Parrott, D. Valcarcel, ASDEX Upgrade team, JET Contributors, EUROfusion Tokamak Exploitation Team, *X-point radiator control and its dynamics in ASDEX Upgrade and JET deuterium-tritium discharges*, Nucl. Fusion 65 (2025) 016057
6. R. Dirza, H. Varadarajan, V. Aas, S. Skogestad, D. Krishnamoorthy, *A comparative study of distributed feedback-optimizing control architectures*, IEEE Trans. Control Syst. Technol. 33 (2025) 613-628
7. L. van Leeuwen, M. Schoukens, J. Citrin, M. van Berkel, B.P. Duval, A. Perek, TCV team, *Machine learning enhanced tomographic reconstruction for multispectral imaging on TCV*, Plasma Phys. Control. Fusion 67 (2025) 025024
8. O. Agullo, D. Grasso, M. Muraglia, M.J. Pueschel, *Magnetic reconnection in space and fusion plasmas*, Phys. Plasmas 32 (2025) 010402
9. M. Yoshida, R.M. McDermott, C. Angioni, Y. Camenen, J. Citrin, M. Jakubowski, J.W. Hughes, Y. Idomura, P. Mantica, A. Mariani, S. Mordijck, E.J. Paul, T. Tala, G. Verdoolaege, A. Zocco, F.J. Casson, G. Dif-Pradalier, B. Duval, B.A. Grierson, S. Kaye, P. Manas, M. Maslov, T. Odstrcil, J.E. Rice, L. Schmitz, F. Sciortino, E.R. Solano, G. Staebler, M. Valovic, E. Wolfrum, J.A. Snipes, *Transport and confinement physics: Chapter 2 of the special issue: on the path to tokamak burning plasma operation*, Nucl. Fusion 65 (2025) 033001
10. M. Coleman, H. Zohm, C. Bourdelle, F. Maviglia, A.J. Pearce, M. Siccino, S. Wiesen, *Definition of an EU-DEMO design point robust to epistemic plasma physics uncertainties*, Nucl. Fusion 65 (2025) 036039
11. M. Morbey, F. Effenberg, S. Abe, T. Abrams, A. Bortolon, R.T. Hood, U. Losada, A. Nagy, J. Ren, T.W. Morgan, D.L. Rudakov, M. Simmonds, D. Truong, *Deuterium retention in pre-lithiated samples and Li-D co-deposits in the DIII-D tokamak*, Nucl. Mater. Energy 43 (2025) 101915
12. J. Boscary, P. Vinoni, D. Marzulla, A. Quartararo, A. Cufar, S. Renard, M. Kannamüller, S. Wiesen, C. Bachmann, D. Leichtle, P. Gallina, R. Neu, *Divertor conceptual design of the European Volumetric Neutron Source*, Fusion Eng. Des. 212 (2025) 114861
13. D. Hwangbo, S. Feng, S. Kajita, H. Tanaka, R. Zhang, Y. Hayashi, M. Morbey, R.H.M. Timmer, J.W.M. Vernimmen, J. Scholten, T.W. Morgan, *Formation of hot spots and arc ignition on tungsten with nano-tendril bundles under high-density hydrogen plasma exposure*, Sci. Rep. 15 (2025) 7903
14. J.M. Duff, B.J. Faber, C. Hegna, M.J. Pueschel, P.W. Terry, *Suppressing trapped-electron-mode-driven turbulence via optimization of three-dimensional shaping*, Nucl. Fusion 65 (2025) 046020

15. J.S. Hu, D. Zhang, G.Z. Zuo, Y. Hirooka, T.W. Morgan, Z. Ye, J.C. Yang, M. Shimada, J. Horacek, Z. Sun, X. Zhang, S. Liu, *Conference report on the 8th international symposium on liquid metals applications for fusion (ISLA-8)*, Nucl. Fusion 65 (2025) 047001
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17. J. Cecrdle, T.W. Morgan, J.G.A. Scholte, J. Horacek, *Measurements of Sn thermally enhanced sputtering yields at Nano-PSI*, J. Fusion Energy 44 (2025) 18
18. Y. Sun, H. Yin, H. Song, J. Wang, H. Wang, L. Cheng, Y. Yuan, H.S. Zhou, T. Schwartz-Selinger, T.W. Morgan, G.H. Lu, *Deuterium retention in recrystallized tungsten exposed to high-flux plasma with fluences up to $1 \times 10^{29} \text{ m}^{-2}$* , Nucl. Fusion 65 (2025) 046030
19. M.J. Pueschel, P. Mulholland, O. Sauter, R. Coosemans, J. Ball, M. Hamed, M. Vallar, TCV team, *Electromagnetic instability and turbulence in plasmas with positive and negative triangularity*, Phys. Plasmas 32 (2025) 052302
20. M. Bernert, T.O.S.J. Bosman, T. Lunt, O. Pan, B. Sieglin, U. Stroth, A. Kallenbach, S. Wiesen, J.T.W. Koenders, L. Ceelen, M. Wischmeier, G. Birkenmeier, M. Cavedon, B. Lipschultz, C. Lowry, N. Fedorczak, P. Fox, M. Lennholm, H. Sun, P. Jacquet, K. Kirov, N. Vianello, D. Brida, S. Henderson, P. David, R. Dux, R.M. McDermott, H. Reimerdes, C. Theiler, M. Komm, O. Fevrier, U. Sheikh, S. Menmuir, M.G. Dunne, O. Kudlacek, F. Reimold, EUROfusion Tokamak Exploitation Team, TCV team, WEST team, JET Contributors, ASDEX Upgrade team, *X-point radiation: From discovery to potential application in a future reactor*, Nucl. Mater. Energy 43 (2025) 101916
21. J.G.A. Scholte, R.S. Al, D. Horsely, M. Iafrati, A. Manhard, E. Martelli, M. Morbey, S. Roccella, J.W.M. Vernimmen, T.W. Morgan, *Liquid metal droplet ejection through bubble formation under hydrogen plasma and radical exposure*, J. Fusion Energy 44 (2025) 22
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23. N. Lonigro, R. Doyle, J.S. Allcock, B. Lipschultz, K. Verhaegh, C. Bowman, D. Brida, J. Harrison, O. Myatra, T. Wijkamp, S. Silburn, C. Theiler, MAST-U Team, EUROfusion Tokamak Exploitation Team, *First 2D electron density measurements using multi-delay coherence imaging spectroscopy in the MAST-U Super-X divertor*, Plasma Phys. Control. Fusion 67 (2025) 035003
24. S. Wiesen, X. Bonnin, R.A. Pitts, *Conclusive benchmark of SOLPS-ITER against SOLPS4.3 ITER divertor design reference*, Nucl. Fusion 65 (2025) 056027
25. A. Kappatou, M. Baruzzo, A. Hakola, E. Joffrin, D. Keeling, B. Labit, E. Tsitrone, T.O.S.J. Bosman, L. Ceelen, S. Wiesen, N. Vianello, M. Wischmeier, I. Balboa, J. Bernardo, M. Bernert, S. Brezinsek, D. Brida, I.S. Carvalho, et al., JET Contributors, EUROfusion Tokamak Exploitation Team, *Overview of the third JET deuterium-tritium campaign*, Plasma Phys. Control. Fusion 67 (2025) 045039
26. M. Brchnelova, M.J. Pueschel, S. Poedts, *Density-gradient-driven drift-wave turbulence in the solar corona*, Astron. Astrophys. 698 (2025) A288
27. H.A. Kumpulainen, D. Reiter, S. Brezinsek, M. Groth, J. Romazanov, S. Wiesen, JET Contributors, *Impact of bivariate energy and angular atomic impact spectra on tungsten erosion in JET*, Plasma Phys. Control. Fusion 67 (2025) 055044

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29. S. Wiesen, C. Bachmann, M. Siccinio, J. Boscary, C. Bourdelle, M. Coleman, G. Federici, F. Maviglia, R. Neu, *Exhaust assessment of a European Volumetric Neutron Source (EU-VNS) using SOLPS-ITER*, Nucl. Mater. Energy 43 (2025) 101939
30. M. Lennholm, L. Piron, D. Valcarcel, P. Almond, M. Baruzzo, M. van Berkel, T.O.S.J. Bosman, L. Ceelen, P. Fox, B. Kool, K. Kirov, C. Lowry, J. Mitchell, B. Sieglin, H. Sun, JET Contributors, EUROfusion Tokamak Exploitation Team, *Fusion burn regulation via deuterium tritium mixture control in the Joint European Torus*, PRX Energy 4 (2025) 023007
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32. K. Verhaegh, J. Harrison, D. Moulton, B. Lipschultz, N. Lonigro, N. Osborne, P. Ryan, T. Wijkamp, G.L. Derks, B. Kool, C. Theiler, D. Brida, C. Cowley, R. Doyle, F. Federici, O. Fevrier, A. Hakola, S. Henderson, H. Reimerdes, A. Thornton, N. Vianello, M. Wischmeier, L.Y. Xiang, EUROfusion Tokamak Exploitation Team, MAST Upgrade Team, *Divertor shaping with neutral baffling as a solution to the tokamak power exhaust challenge*, Nat. Commun. Phys. 8 (2025) 215
33. L. Frassinetti, D. King, S. Saarelma, D. Keeling, C. Perez von Thun, C. Giroud, S. Wiesen, A. Kappatou, N. Vianello, E. Alessi, M. Brix, I.S. Carvalho, P. Carvalho, A. Chomiczewska, J.M. Fontdecaba, E. Giovannozzi, D. Kos, E. Kowalska-Strzeciwillk, B. Labit, M. Lennholm, M. Maslov, A. Meigs, S. Menmuir, R. Bianchetti-Morales, H. Nystrom, E. Pawelec, G. Pucella, D. Silvagni, A. Stagni, H.J. Sun, *Low collisionality, peeling limited pedestals in JET-ILW: effect of density and isotope mass on pedestal structure, pedestal stability and pedestal prediction in deuterium and mixed deuterium/tritium plasmas*, Nucl. Fusion 65 (2025) 076028
34. C.A. Orrico, D. Abate, M. van Berkel, T.O.S.J. Bosman, L. Ceelen, W.P.M.H. Heemels, F. Koechl, D. Krishnamoorthy, *Predictive density profile control with discrete pellets, applied to integrated simulations of ITER*, Nucl. Fusion 65 (2025) 076041
35. F. Subba, W. van Uytven, S. Wiesen, *Power exhaust scenarios for EU-DEMO*, Nucl. Fusion 65 (2025) 086024
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37. Y. Hayashi, H. Tanaka, S. Kajita, N. Ohno, D. Hwangbo, J.W.M. Vernimmen, J. Scholten, H.J. van der Meiden, I.G.J. Classen, T.W. Morgan, *Dynamic response of atomic processes in detached helium plasma induced by high-density transient pulse in Magnum-PSI*, Nucl. Fusion 65 (2025) 086013
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41. G.L. Derks, S.P. Kobussen, E. Westerhof, S. Wiesen, *Benchmarking the global particle balance of DIV1D with SOLPS-ITER simulations on the Tokamak à Configuration Variable*, Plasma Phys. Control. Fusion 67 (2025) 105003
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Publications in other journals and conference proceedings: 17

1. J.J. Palacios Roman, M. van Berkel, W.P.M.H. Heemels, T. van Keulen, *Extensions to fast extremum seeking control using online complex curve fitting*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 73
2. L.L.T.C. Jansen, E. Petri, W.P.M.H. Heemels, M. van Berkel, *Nuclear fusion plasma fuelling with ice pellets using a neuromorphic controller*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 174
3. E.M.M. Kivits, M. van Berkel, M.R. de Baar, *Network identification of plasma in a nuclear fusion reactor*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 202
4. L. Ceelen, C.A. Orrico, J.H. Jenneskens, T.O.S.J. Bosman, M. van Berkel, *Identifying reduced-order models from high-fidelity simulations for density control in fusion reactors*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 63
5. T.O.S.J. Bosman, L. Ceelen, G.L. Derks, M. van Berkel, *Exhaust control in fusion reactors via X-point radiator control*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 148
6. H. Prasad Varadarajan, D. Krishnamoorthy, *Resiliency aware feedback optimizing control structure design for peer-to-peer coordination*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 200
7. M. Lauret, J.T. Veenendaal, G.L. Derks, M. Heertjes, M. van Berkel, *Time-delayed Hammerstein-Wiener and Lurie systems for exhaust control in nuclear fusion*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 206
8. P.A. Figueiredo, M. van Berkel, *Interaction analysis and decoupled control of the power exhaust for nuclear fusion reactors*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 161
9. J.H. Jenneskens, L. Ceelen, M. van Berkel, B. Koren, *Reconstructing the heat flux with a gradient dependent diffusion coefficient from periodically perturbed temperature profiles*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 64
10. B. Kool, K. Verhaegh, T.A. Wijkamp, P.A. Figueiredo, G.L. Derks, N. Lonigro, V. Kachkanov, C. Vincent, G. McArdle, J. Lovell, S. Henderson, J. Baker, M. van Berkel, EUROfusion Tokamak Exploitation Team, MAST-U Team, *Pumping and gas valve placement effects on exhaust control in the MAST-U fusion experiment*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 208
11. J.T. Veenendaal, M. Lauret, J. Olucha, M. van Berkel, *A robust control oriented model of a tokamak divertor*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 199
12. M. de Beij, C.A. Orrico, L. Ceelen, M. van Berkel, M.R. de Baar, D. Krishnamoorthy, *Real-time density profile estimation at WEST*, Book of Abstracts 44th Benelux Meeting on Systems and Control (2025) 124
13. B. Kool, K. Verhaegh, P.A. Figueiredo, G.L. Derks, T.A. Wijkamp, N. Lonigro, V. Kachkanov, C. Vincent, G. McArdle, M. van Berkel, J. Lovell, S.S. Henderson, J. Baker, EUROfusion Tokamak Exploitation Team, MAST-U Team, *Alternative divertor configurations improve power exhaust control*, Book of Abstracts 9th Asia-Pacific Conference on Plasma Physics, 21-26 Sep, 2025, Fukuoka, Japan (2025) MF2-10-11
14. T.O.S.J. Bosman, M. Bernert, L. Ceelen, B. Sieglin, J.T.W. Koenders, T. Ravensbergen, O. Kudlacek, P. Fox, D. Brida, H. Reimerdes, C. Lowry, M. Lennholm, L. Piron, H. Sun, P. Jacquet, K. Kirov, N. Vianello, C. Ashe, A. Parrott, D. Valcarcel, M. van Berkel, ASDEX Upgrade team, JET Contributors, EUROfusion Tokamak Exploitation Team, *X-point radiator control and its dynamics in ASDEX Upgrade and JET deuterium-tritium discharges*, Book of Abstracts 9th Asia-Pacific Conference on Plasma Physics, 21-26 Sep, 2025, Fukuoka, Japan (2025) MF2-3-14
15. S. Wiesen, S. Dasbach, G.L. Derks, A. Gillgren, A. Ho, A.E. Järvinen, A. Kit, V. Menkovski, D. vander Mijnsbrugge, A. Panera, Y. Poels, E. Westerhof, *Data-driven models for fusion plasma exhaust: AI methods gaining maturity*, Book of Abstracts 9th Asia-Pacific Conference on Plasma Physics, 21-26 Sep, 2025, Fukuoka, Japan (2025) B1-8-12

16. A. Panera Alvarez, E. Geulin, F. Koechl, P. Lang, S. Wiesen, C. Bourdelle, WEST team, AUG Team, *Pellet fueling: AI-enhanced surrogate modelling and integrated modeling*, Book of Abstracts 9th Asia-Pacific Conference on Plasma Physics, 21-26 Sep, 2025, Fukuoka, Japan (2025) B1-10-I4
17. A.J.H. Donné, Y. Zhu, *A brief history and evolution of Electron Cyclotron Emission Imaging (ECEI) Systems*, Proceedings of 50th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2025) 50 (2025) 1-2

Professional publications: 5

1. European Commission Fusion Expert Group, E. Westerhof, et al., *Towards the EU fusion strategy*, Luxembourg, FEG Opinion paper 2025 (2025) 24
2. T. Bosman, S. Wiesen, E.M.M. Kivits, M.R. de Baar, *Sidestepping physics to run fusion power plants*, Focus ebook Fusion Energy 'Harnessing the power of the stars: The future of fusion energy' 1 (2025) 8-11
3. M.R. de Baar, *Valorisation in fusion research and technology: Creating value from knowledge*, Cheshire, UK, The Innovation Platform magazine 21 (2025) 114-117
4. M.R. de Baar, H.J.N. van Eck, T.W. Morgan, B. Tyburska-Pueschel, *Creating a box for the Sun with fusion reactors*, Cheshire, UK, The Innovation Platform magazine 22 (2025) 140-143
5. M. van Berkel, G.L. Derks, B. Kool, C.A. Orrico, *Advanced control strategies for divertor power sharing and core density regulation in fusion energy devices*, The Innovation Platform magazine 24 (2025) 184-187

Open Software: 1

1. B. Kool, (Open software) *Analysis scripts for the Nature Energy paper "Demonstration of Super-X divertor exhaust control for transient heat load management in compact fusion reactors"*, 2025/04/30

Invited lectures at conferences and meetings: 17

1. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, I.G.J. Classen, *Active spectroscopy of neutral hydrogen in the linear plasma device Magnum-PSI*, Oral 21st Focus session K 12:00
2. 38th Eindhoven Physics Symposium 2025 'Order and Chaos', 2025/02/07, Eindhoven, Netherlands, M.J. Pueschel, *The regulation of plasma turbulence with damped waves*, Oral
3. CFS boundary workshop, 2025/03/11, Devens, MA, US, M. van Berkel, J.T. Veenendaal, M. Lauret, G.L. Derks, T.O.S.J. Bosman, B. Kool, S.P. Kobussen, S. Dasbach, S. Wiesen, DIFFER ESC team, *Exhaust modelling using SOLPSNN with an example of MPC and the assessment of re-attachment times*, Oral
4. STEP presentation at UKAEA, 2025/03/24, Culham, UK, M. van Berkel, B. Kool, P.A. Figueiredo, E.M.M. Kivits, M.R. de Baar, DIFFER ESC team, *Integrating complexity: From coupling one sensor to one actuator towards complex systems*, Oral
5. UKAEA presentation, 2025/03/24, Culham, UK, M.R. de Baar, *Model based supervisory control synthesis for nuclear fusion reactors*, Oral

6. 2nd European Conference on Magnetic Reconnection in Plasmas ECMRP 2025, 2025/06/17-2025/06/19, Torino, Italy, T. Jitsuk, M.J. Pueschel, P.W. Terry, A. Di Siena, E. Poli, F. Widmer, J.S. Sarff, O. Sauter, M. Kong, M. Muraglia, *Multi-scale turbulent interactions between tearing modes and microturbulence in magnetically confined plasmas*, Oral
7. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, S. Wiesen, M. Bernert, M. Coleman, M. Faitsch, M. Siccinio, M. van Berkel, M. Wischmeier, H. Zohm, EUROfusion Tokamak Exploitation Team, JET Contributors, *Power and particle exhaust physics for fusion reactors*, Oral M1
8. Lecture Division of the (Japanese) Society of Instrument Control Engineers (SICE), 2025/05/21, Nagoya, Japan, M. van Berkel, *Distributed identification and control in nuclear fusion reactors*, Oral
9. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, M. Morbey, F. Effenberg, J.D. Coburn, T.W. Morgan, A. Bortolon, D.L. Rudakov, J. Ren, R.T. Hood, T. Odstrcil, J.G.A. Scholte, *Lithium transport and stability in capillary porous structures exposed to tokamak divertor conditions*, Oral UI04 2:00 pm
10. 9th Asia-Pacific Conference on Plasma Physics (AAPPs-DDP2025), 2025/09/21-2025/09/26, Fukuoka, Japan, B. Kool, K. Verhaegh, P.A. Figueiredo, G.L. Derks, T.A. Wijkamp, N. Lonigro, V. Kachkanov, C. Vincent, G. McArdle, M. van Berkel, *Alternative divertor configurations improve power exhaust control*, Oral MF2-10-I1
11. 9th Asia-Pacific Conference on Plasma Physics (AAPPs-DDP2025), 2025/09/21-2025/09/26, Fukuoka, Japan, T.O.S.J. Bosman, M. Bernert, L. Ceelen, B. Sieglin, J.T.W. Koenders, T. Ravensbergen, O. Kudlacek, P. Fox, D. Brida, H. Reimerdes, C. Lowry, M. Lennholm, L. Piron, H. Sun, P. Jacquet, K. Kirov, N. Vianello, C. Ashe, A. Parrott, D. Valcarcel, M. van Berkel, ASDEX Upgrade team, JET Contributors, EUROfusion Tokamak Exploitation Team, *X-point radiator control and its dynamics in ASDEX Upgrade and JET deuterium-tritium discharges*, Oral MF2-3-I4
12. CFS boundary workshop, 2025/03/11, Devens, MA, US, S. Dasbach, S. Wiesen, *A neural-network for SOLPS - Application for SPARC detachment control*, Oral
13. 21st International Symposium on Laser-Aided Plasma Diagnostics (LAPD 2025), 2025/09/01-2025/09/05, Saillon, Switzerland, K. Schutjes, K.J. Loring, J.W.M. Vernimmen, I.G.J. Classen, Magnum-PSI team, *TALIF and CARS on measurements on fusion-relevant linear plasma devices*, Oral T1
14. Workshop on a potential role of Oman in the nuclear fusion endeavour, 2025/10/25, Muscat, Oman, A.J.H. Donné, *Nuclear Fusion: from breakthroughs to real-world power*, Oral
15. 20th Anniversary Celebration of the Polish Euratom-IPPLM Association (CeNTE) Panel II: The Future of Fusion Research - Key Milestones, Breakthrough Innovations, and Industry Collaboration, 2025/09/19, Warsaw, Poland, A.J.H. Donné, *European fusion programme over the past 20 years*, Oral
16. Meeting of ITPA Real-time Diagnostics Subgroup (RT SWG), Hefei, China, 2025/05/06- 2025/05/09, M.R. de Baar, *ITPA Real Time Diagnostics Subgroup RT SWG Report*, Oral
17. 5th Joint Nordic Fusion Energy Seminar, Tromso, Norway, 2025/06/17-2025/06/18, M.R. de Baar, *Taking it to the next level: A system engineering approach to plasma control*, Oral Plenary FPP 13:45

Invited seminars: 6

1. Seminar Harvard Medical School Dettmer Lab, 2025/05/02, Boston, MA, USA, M.J. Pueschel, *Energy for humanity: Nuclear fusion against the odds of turbulence*, Oral
2. Seminar Kyoto University, 2025/05/22, Kyoto, Japan, M. van Berkel, *Distributed identification and control in nuclear fusion reactors*, Oral
3. 6th PhDiaFusion Summer School, Niepolomice, Poland, 2025/06/09-2025/06/13, M.R. de Baar, *(Data-driven modeling for) Real time plasma control and the use of AI for the RT (Real-time) analysis of complex data*, Oral

4. Seminar WEST Team, CEA tokamak, Cadarache, France, 2025/10/03, M.R. de Baar, *A system engineering approach to plasma control*, Oral
5. Seminar Ecole Polytechnique, Palaiseau, Paris, 2025/10/16, Paris, France, A.J.H. Donné, *Nuclear fusion: From science fiction to science fact*, Oral
6. Seminar EPFL, 2025/11/26, Lausanne, Switzerland, M. van Berkel, *Distributed identification and control in nuclear fusion reactors*, Oral

Oral and poster presentations at (international) conferences & meetings: 79

1. 8th IFAC Conference on Nonlinear Model Predictive Control (IFAC NMPC 2024), 2024/08/21-2024/08/24, 9th International Workshop on Plasma Material Interaction Facilities for Fusion Research PMIF 2025, 2025/10/06-2025/10/08, Kyoto, Japan, H.J.N. van Eck, I.G.J. Classen, M.J.H. Cornelissen, J. Hargreaves, K. Loring, M. Morbey, T.W. Morgan, C.J.D. Robben, K. Schutjes, B. Tyburska-Püschel, DIFFER Team, *Recent developments and experiments at DIFFER's PSI facilities*, Oral 6 Oct 10:40 AM
2. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, J.G.A. Scholte, *Champagne as a plasma-facing component*, Oral 21st Parallel session K 15:35
3. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, G.L. Derks, M. van Berkel, J.T.W. Koenders, E. Westerhof, S. Wiesen, A. Perek, H. Reimerdes, *Integrated dynamic core-edge simulations for fusion reactors*, Oral 21st Parallel session K 16:20
4. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, M. Morbey, *Lithium transport and stability in a CPS exposed to strike point plasmas*, Oral 21st Parallel session K 17:20
5. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, B. Kool, K. Verhaegh, T.A. Wijkamp, P. Figueiredo, G.L. Derks, N. Lonigro, V. Kachkanov, C. Vincent, G. McArdle, J. Lovell, S. Henderson, J. Baker, M. van Berkel, *Pumping and gas valve placement effects on exhaust control in the MAST-U fusion experiment*, Oral ThM05-1
6. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, L.L.T.C. Jansen, E. Petri, W.P.M.H. Heemels, M. van Berkel, *Nuclear fusion plasma fuelling with ice pellets using a neuromorphic controller*, Oral WeA07-4
7. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, E.M.M. Kivits, M. van Berkel, M.R. de Baar, *Network identification of plasma in a nuclear fusion reactor*, Oral ThM03-4
8. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, T.O.S.J. Bosman, L. Ceelen, G.L. Derks, M. van Berkel, *Exhaust control in fusion reactors via X-point radiator control*, Oral WeA03-2
9. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, M. Lauret, J.T. Veenendaal, G.L. Derks, M. Heertjes, M. van Berkel, *Time-delayed Hammerstein-Wiener and Lurie Systems for exhaust control in nuclear fusion*, Oral ThM04-4
10. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, P.A. Figueiredo, M. van Berkel, *Interaction analysis and decoupled control of the power exhaust for nuclear fusion reactors*, Oral WeA05-3
11. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, L. Ceelen, C.A. Orrico, J.H. Jenneskens, T.O.S.J. Bosman, M. van Berkel, *Identifying reduced-order models from highfidelity simulations for density control in fusion reactors*, Oral TuA08-1

12. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, J.H. Jenneskens, L. Ceelen, M. van Berkel, B. Koren, *Reconstructing the heat flux with a gradient dependent diffusion coefficient from periodically perturbed temperature profiles*, Oral TuA08-2
13. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, M. de Beij, C.A. Orrico, L. Ceelen, M. van Berkel, M.R. de Baar, D. Krishnamoorthy, *Real-time density profile estimation at WEST*, Oral WeM08-3
14. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, J.T. Veenendaal, M. Lauret, J. Olucha, M. van Berkel, *A robust control oriented model of a tokamak divertor*, Oral ThM03-1
15. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, H. Prasad Varadarajan, D. Krishnamoorthy, *Resiliency aware feedback optimizing control structure design for peer-to-peer coordination*, Oral ThM03-2
16. 44th Benelux Meeting on Systems and Control 2025, 2025/03/18-2025/03/20, Egmond aan Zee, Netherlands, J.J. Palacios Roman, M. van Berkel, W.P.M.H. Heemels, T. van Keulen, *Extensions to fast extremum seeking control using online complex curve fitting*, Oral TuA09-5
17. Meeting of ITPA Topical Group SOL and Divertor Physics (DivSOL), 2025/05/06-2025/05/09, Hefei, China, M. van Berkel, G.L. Derks, L. Ceelen, T.O.S.J. Bosman, B. Kool, T. Ravensbergen, J.T.W. Koenders, C.A. Orrico, L.L.T.C. Jansen, J.J. Palacios Roman, A. Perek, H. Anand, M.R. de Baar, M. Bernert, D. Brida, I. Carvalho, B.P. Duval, D. Eldon, N. Fedorczak, O. Fevrier, C. Galperti, S. Henderson, R.J.R. van Kampen, D. King, K. Kirov, O. Kudlacek, M. Lennholm, A.W. Leonard, N. Lonigro, J. Lovell, R. Nouailletas, A. Parrott, L. Piron, H. Reimerdes, B. Sieglin, J. Slief, H.J. Sun, T. Tala, C. Theiler, D. Valcarcel, K. Verhaegh, C. Vincent, D. Weldon, E. Westerhof, T.A. Wijkamp, S. Wiesen, *Systematic multi-machine analysis of the exhaust time-dependent behavior in tokamaks*, Oral
18. Meeting of ITPA Topical Group SOL and Divertor Physics (DivSOL), 2025/05/06-2025/05/09, Hefei, China, T.O.S.J. Bosman, A. Perek, L. Ceelen, A. Mele, M. Bernert, M. van Berkel, *Detachment control during dynamic disturbances at JET and TCV*, Oral
19. US Transport Task Force Meeting (TTF 2025), 2025/04/22-2025/04/25, Seattle, WA, US, M.J. Pueschel, P. Mulholland, J.H.E. Proll, L.J.F. Hol, O. Sauter, R. Coosemans, M.M. Skyllas, T. Jitsuk, K.C.F. Koolen, I. Claassen, J. Ball, M. Hamed, *The impact of 2D and 3D magnetic geometry on electromagnetic instabilities and turbulence*, Oral Apr. 23, Session 4, 2:15
20. US Transport Task Force Meeting (TTF 2025), 2025/04/22-2025/04/25, Seattle, WA, US, T. Jitsuk, M.J. Pueschel, P.W. Terry, A. Di Siena, *Multi-scale MHD-microturbulence interactions in magnetically confined plasmas*, Oral Apr. 23, Session 4, 3:00
21. US Transport Task Force Meeting (TTF 2025), 2025/04/22-2025/04/25, Seattle, WA, US, T. Jitsuk, M.J. Pueschel, P.W. Terry, A. Di Siena, *Multi-scale MHD-microturbulence interactions in magnetically confined plasmas*, Poster P46
22. Eurofusion Plasma Science for DEMO PSD-DCT coordination meeting N48. Detachment control 2nd part, 2025/03/19, Garching, Germany, M. van Berkel, DIFFER ESC team, *Discussion on re-attachment times. Update on control-oriented modelling*, Oral
23. 34th Meeting of the ITPA Integrated Operation Scenarios Topical Group (IOS), 2025/06/02-2025/06/05, San Diego, CA, USA, M. Lennholm, L. Piron, D. Valcarcel, J. Mitchell, M. van Berkel, T.O.S.J. Bosman, B. Kool, L. Ceelen, K. Kirov, A. Mitra, S. Van Mulders, P. Almond, M. Baruzzo, F.J. Casson, P. Fox, C. Lowry, B. Sieglin, H. Sun, E. Tholerus, JET Contributors, STEP Team, EUROfusion Tokamak Exploitation Team, *Burn control from DT experiments to power plants*, Oral
24. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, V.K. Zotta, C. Leoni, L. Garzotti, C. Giroud, S. Gabriellini, R. Gatto, C. Bourdelle, L. Frassinetti, D.B. King, S. Wiesen, K. Lawson, S. Menmuir, G. Pucella, N. Vianello, *The ITER baseline on JET in D-T with neon seeding*, Poster 1P-048

25. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, M. Szucs, M. Hölzl, A. Cathey, Y. Liang, S. Korving, D. Maris, *3D nonlinear MHD modeling of detachment, burn-through and the X-point radiator regime with kinetic neutrals and impurities*, Poster 2P-112
26. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, A. Chandrarajan Jayalekshmi, M.J. Pueschel, D.R. Hatch, S. Brunner, P. Jitsuk, J. Ball, *Electron-temperature-gradient mode evolution in the presence of a corrugated electron temperature gradient in the tokamak pedestal*, Poster 2P-134
27. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, P. Lang, A. Bock, R. Fischer, E. Geulin, S. Hayes, O. Kudlacek, A. Panera Alvarez, P. Bernhard, B. Sieglin, G. Sellmair, W. Treutterer, AUG Team, *Real-time pellet ablation radiation monitoring for a refined plasma core density control in ASDEX Upgrade*, Poster 3P-211
28. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, S. Korving, F. Köchl, A. Pshenov, O. Pan, S. Pinches, R. Pitts, R. Futtersack, A. Loarte, M. Bernert, S. Wiesen, EUROfusion WPTE Team, ASDEX Upgrade team, *Development towards integrated modeling of the X-point radiator in ASDEX Upgrade with JINTRAC*, Poster 4P-251
29. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, Y. Volkova, I.E. Garkusha, I.G.J. Classen, H.J. van der Meiden, J.W.M. Vernimmen, V. Makhelai, S.S. Herashchenko, Y.V. Petrov, N.V. Kulik, D.V. Yeliseyev, P.B. Shevchuk, *Thomson scattering system for extreme plasma-surface interaction studies in QSPA*, Poster 4P-303
30. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, D. Moiraf, D. Brida, G. Ciruolo, N. Fedorczak, O. Fevrier, J.R. Harrison, S. Henderson, B. Kool, J. Lovell, J. Morales, O. Myatra, N. Rivals, C. Theiler, K. Verhaegh, L. Xiang, MAST-U Team, TCV team, WEST team, EUROfusion WPTE Team, *Addressing the power exhaust challenge with double-null configurations*, Oral O-055
31. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, A. Kit, A.E. Jarvinen, Y.R.J. Poels, S. Wiesen, V. Menkovski, F. Fischer, M. Dunne, *Towards continual learning surrogates for transport solvers*, Oral O-152
32. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, C. Orrico, H. Varadarajan, L. Ceelen, M. van Berkel, T.O.S.J. Bosman, J.H. Jenneskens, F. Koechl, M. Heemels, D. Krishnamoorthy, *Robust model predictive density profile control with discrete pellets, applied to integrated simulations of ITER*, Poster
33. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, L. Ceelen, C. Orrico, J.H. Jenneskens, T.O.S.J. Bosman, F. Koechl, M. van Berkel, *Identifying reduced-order models from high-fidelity simulations for density control with pellet injection*, Poster
34. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, T.O.S.J. Bosman, J.T.W. Koenders, A. Perek, H. Reimerdes, A. Mele, M. Bernert, M. van Berkel, *Emission front control during strike-point sweeping at TCV in view of emergency control when re-attaching on DEMO*, Poster
35. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, D. Andruczyk, A. Shone, N. Mihajlov, G. Le, H. Yu, R. Maingi, Z. Sun, J. Hu, G. Zuo, M. Morbey, T.W. Morgan, *Overview of helium retention results with lithium*, Poster
36. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, H.E. Tipping, J. Hargreaves, C. Jones, T.W. Morgan, M. Zimina, D. Bowden, T. Martin, *Using Magnum-PSI to replicate fusion plasma and transient exposure on Eurofer-97*, Poster
37. 31st IEEE Symposium on Fusion Engineering 2025 (SOFE2025), 2025/06/23-2025/06/26, Cambridge, MA, US, T.F. Beernaert, M. De Bock, L. Moser, P. Etman, I.G.J. Classen, M.R. de Baar, *Enhancing nuclear fusion systems: How model-based systems engineering solves complex design challenges*, Poster
38. 2nd European Conference on Magnetic Reconnection in Plasmas ECMRP 2025, 2025/06/17-2025/06/19, Torino, Italy, M.J. Pueschel, M. Brchnelova, S. Poedts, *Drift-wave turbulence: a heating mechanism for the solar corona*, Poster

39. IBA-PIXE 2025 Joint conferences 27th Ion Beam Analysis (IBA) 19th Particle-Induced X-ray Emission (PIXE), 2025/08/17-2025/08/22, Montreal, Canada, C.J.D. Robben, J.A.G. van Kesteren, R.H.M. Timmer, W. Arnold Bik, M. Morbey, T.W. Morgan, B. Tyburska-Pueschel, *Dynamic deuterium transport measurements using operando ion beam analysis in Upgraded Pilot-PSI*, Oral #139
40. IBA-PIXE 2025 Joint conferences 27th Ion Beam Analysis (IBA) 19th Particle-Induced X-ray Emission (PIXE), 2025/08/17-2025/08/22, Montreal, Canada, B. Tyburska-Pueschel, V. Mathayan, E. Zoethout, P. Kunturu, A. Ranade, M.N. Tsampas, *Operando IBA: real-time monitoring of electrocatalyst degradation*, Oral #62
41. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, E.M.M. Kivits, M. van Berkel, P.A. Figueiredo, M.R. de Baar, *Network identification of the design structure matrix with application to STEP*, Poster P57
42. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, K. Schutjes, I.G.J. Classen, J.W.M. Vernimmen, H.J. van der Meiden, Magnum-PSI team, *CARS Diagnostic for measuring rovibrational populations of hydrogen in divertor-relevant plasmas: Development, calibration, and first results*, Oral O1
43. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, C. Bachmann, M. Siccino, R. Ambrosino, J. Bajari, J. Boscary, S. Carusotti, V. Claps, A. Cufar, J. Elbez-Uzan, S. Wiesen, et al., *Progress in the concept development of the VNS - a beam-driven tokamak for component testing*, Poster P3-3126
44. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, S. Wiesen, C. Bachmann, C. Bourdelle, F. Maviglia, G. Federici, J. Boscary, M. Coleman, M. Siccino, R. Neu, *Exhaust operational space assessment for the European Volumetric Neutron Source (EU-VNS)*, Poster P5-3048
45. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, C. Giroud, D.B. King, I.S. Carvalho, D.L. Keeling, L. Frassinetti, R.A. Pitts, G. Pucella, S. Wiesen, A. Kappatou, N. Vianello, et al., *High performance ELM-free semi-detached scenario sustained at high-current in JET DTE3*, Oral EX/2-2924
46. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, A. Järvinen, A. Bruncrona, D. Jordan, A. Kit, A. Niemela, M. Dunne, L. Frassinetti, D.R. Hatch, L. Leppin, S. Wiesen, V. Menkovski, Y.R.J. Poels, et al., *Developing machine learning facilitated pedestal models*, Poster P1-3029
47. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, M. Yoshikawa, H.J. van der Meiden, J. Kohagura, N. Ezumi, T. Kariya, R. Minami, T. Numakura, M. Hirata, S. Togo, K. Emoto, S. Kobayashi, et al., *Effect of edge-localized mode simulation on detached plasma in the divertor simulation experimental module of GAMMA 10/PDX*, Poster P2-2691
48. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, I. Garkusha, V. Makhilai, S.S. Herashchenko, Y.V. Petrov, Y.Y. Volkova, N.V. Kulik, D.V. Yeliseyev, P.B. Shevchuk, Y.V. Siromolot, T.W. Morgan, *Performance of Li- and Sn-filled CPS targets under the transient plasma loads in QSPA*, Poster P7-2810
49. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, E. Pennington, T.F. Beernaert, T. Thompson, M.R. de Baar, M. Lennholm, J. Joannou, *Application of a design structure matrix methodology to STEP plasma control system design and sensor optimisation*, Poster P6-3068
50. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, K. Verhaegh, C. Theiler, D. Brida, M. Carpita, G.L. Derks, O. Fevrier, F. Federici, A. Hakola, B. Kool, T. Wijkamp, J.R. Harrison, A. Perek, et al., MAST-U Team, TCV team, EUROfusion WPTE Team, *The physics basis for implementing Alternative Divertor Configurations on reactors*, Oral EX/D-3088
51. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, K. Verhaegh, C. Theiler, D. Brida, M. Carpita, G. Derks, O. Fevrier, F. Federici, A. Hakola, B. Kool, T. Wijkamp, J.R. Harrison, A. Perek, et al., MAST-U Team, TCV team, EUROfusion WPTE Team, *The physics basis for implementing Alternative Divertor Configurations on reactors*, Poster P4-3413

52. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, M. Baruzzo, S. Aleiferis, P. Almond, T.O.S.J. Bosman, L. Ceelen, P. Fox, H.J. Sun, K. Kirov, M. Lennholm, M. van Berkel, A. Mele, et al., JET Contributors, EUROfusion WPTE Team, *Plasma control experiments in JET deuterium-tritium plasmas*, Poster P6-3467
53. 30th IAEA Fusion Energy Conference (FEC 2025), 2025/10/13-2025/10/18, Chengdu, China, M. Baruzzo, S. Aleiferis, P. Almond, T.O.S.J. Bosman, L. Ceelen, P. Fox, H.J. Sun, K. Kirov, M. Lennholm, M. van Berkel, A. Mele, et al., JET Contributors, EUROfusion WPTE Team, *Plasma control experiments in JET deuterium-tritium plasmas*, Oral EX/C-3038
54. 29th EU-US Transport Task Force Workshop (EU-US TTF 2025), 2025/09/09-2025/09/12, Budapest, Hungary, M. Becoulet, G.T.A. Huijsmans, X. Garbet, P. Donnel, G. Dif-Pradalier, Y. Sarazin, L. Schmitz, C. Chrystal, A. Marinoni, M.J. Pueschel, et al., *Non-linear gyro-kinetic Ion Temperature Gradient (ITG) and Trapped Electron Modes (TEM) turbulence modelling in X-point geometry in negative and positive triangularity shapes*, Oral
55. 29th EU-US Transport Task Force Workshop (EU-US TTF 2025), 2025/09/09-2025/09/12, Budapest, Hungary, B. Liu, C. Bourdelle, S. Wiesen, T. Fonghetti, *Strong impact of separatrix conditions on full-radius L-mode predictive integrated modelling*, Oral
56. 29th EU-US Transport Task Force Workshop (EU-US TTF 2025), 2025/09/09-2025/09/12, Budapest, Hungary, J.H.E. Proll, P. Mulholland, M.J. Pueschel, M.C.L. Morren, P. Costello, G.M. Weir, K. Aleynikova, et al., G.G. Plunk, W7-X Team, *Addressing turbulence questions in the Wendelstein 7-X stellarator - a combined experimental and theoretical approach*, Oral
57. 29th EU-US Transport Task Force Workshop (EU-US TTF 2025), 2025/09/09-2025/09/12, Budapest, Hungary, C. Bourdelle, J.F. Artaud, J. Boscary, Y. Camenen, M. Coleman, A. Di Siena, M. Dunne, E. Fransson, F. Koechl, S. Wiesen, et al., *Physics uncertainties: impact and mitigation on a DEMO burning plasma*, Poster P6
58. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, S. Dasbach, S. Ballinger, T. Body, T. Eich, T. Looby, J. Lore, M. van Berkel, M. Wigram, S. Wiesen, *Application of neural networks for SPARC exhaust modelling*, Oral JO04 2:24 pm
59. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, A. Perek, L. van Leeuwen, G.L. Derks, J.T.W. Koenders, J. Caballero, T.A. Wijkamp, O. Fevrier, H. Reimerdes, K. Verhaegh, M. van Berkel, C. Theiler, B. Duval, *Real-time multispectral imaging plasma edge analysis through machine learning on the TCV tokamak*, Oral UO09 4:36 pm
60. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, M. van Berkel, *Systematic multi-machine analysis of the exhaust time-dependent behaviour in tokamaks*, Oral GO04 10:54 am
61. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, H.O. Miller-Hillebrecht, M.J. Gerard, M. Richardson, X. Han, G.W. Held, G.M. Weir, B.J. Faber, M.J. Pueschel, B. Geiger, *Study of TEMs and quasi-coherent modes via synthetic and experimental reflectometer measurements at the HSX stellarator*, Oral CO04 3:12 pm
62. 67th Annual Meeting of the APS Division of Plasma Physics, 2025/11/17-2025/11/21, Long Beach, CA, USA, G.W. Held, B.J. Faber, B. Geiger, C.C. Hegna, J.H.E. Proll, M.J. Pueschel, L. Singh, P.W. Terry, G.M. Weir, *Synthetic data comparisons against experimental W7X and HSX CECE data*, Poster Session VIII P60
63. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, B. Kool, K.H.A. Verhaegh, P. Figueiredo, G.L. Derks, T.A. Wijkamp, N. Lonigro, V. Kachkanov, M. Kochan, C. Vincent, M. van Berkel, G. McArdle, J. Lovell, S. Henderson, J. Baker, EUROfusion Tokamak Exploitation Team, MAST-U Team, *Exhaust control in alternative divertors for transient heat load management*, Oral Fr.09:45
64. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, O. Pan, M. Bernert, T.O.S.J. Bosman, L. Ceelen, P. Fox, B. Sieglin, C. Lowry, M. Lennholm, H.J. Sun, P. Jacquet, K. Kirov, S. Menmuir, D. Brida, S. Henderson, H. Reimerdes, N. Vianello, *The X-Point radiating regime at JET in D and DT plasmas with mixed impurities*, Oral Wed.10:25

65. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, G.L. Derks, A. Perek, B. Kool, C. Theiler, E. Westerhof, E.M.M. Kivits, J.T.W. Koenders, S.P. Kobussen, M. van Berkel, S. Wiesen, T.A. Wijkamp, H. Reimerdes, H. Yang, O. Fevrier, TCV team, EUROfusion WPTE Team, *On the validation of dynamic models for (exhaust) control on DEMO class devices; a comparison in multiple fidelities to experiments in TCV*, Oral Thu.12:00
66. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, S. Korving, A. Loarte, A. Pshenov, F. Köchl, M. Bernert, O. Pan, R.A. Pitts, R. Futtersack, S.D. Pinches, S. Wiesen, ASDEX Upgrade team, EUROfusion WPTE Team, *Progress towards JINTRAC integrated modelling of X-point radiators*, Oral Wed.10:05
67. 5th IAEA Technical Meeting on Divertor Concepts, 2025/10/28-2025/10/31, Vienna, Austria, K. Verhaegh, J. Harrison, D. Moulton, C. Theiler, D. Brida, B. Lipschultz, N. Lonigro, N. Osborne, L. Xiang, P. Figueiredo, A. Hakola, et al., *Divertor shaping as a continuum strategy to solving the power exhaust challenge*, Oral Tue.10:05
68. 64th IEEE Conference on Decision and Control (CDC 2025), 2025/12/10-2025/12/12, Rio de Janeiro, Brazil, L.L.T.C. Janssen, E. Petri, M. van Berkel, W.P.M.H. Heemels, *Nuclear fusion plasma fuelling with ice pellets using a neuromorphic controller*, Oral WeA01.8
69. 64th IEEE Conference on Decision and Control (CDC 2025), 2025/12/10-2025/12/12, Rio de Janeiro, Brazil, J.H. Jenneskens, L. Ceelen, M. Schoukens, M. van Berkel, *Designing positive excitation signals for the safe identification of nonlinear integrating systems*, Oral FrA03.3
70. 64th IEEE Conference on Decision and Control (CDC 2025), 2025/12/10-2025/12/12, Rio de Janeiro, Brazil, C.A. Orrico, H. Prasad Varadarajan, M. van Berkel, L. Ceelen, T.O.S.J. Bosman, W.P.M.H. Heemels, D. Krishnamoorthy, *MPC strategies for density profile control with pellet fueling in nuclear fusion tokamaks under uncertainty*, Oral FrA16.8
71. 36th ITPA Topical Group SOL and Divertor Physics (DivSOL), 2025/06/03-2025/06/06, Hefei, China, O. Pan, C. Giroud, S. Wiesen, F. Auriemma, P. Innocente, A. Järvinen, et al., *SOLPS-ITER modeling for Ne-seeded JET baseline discharge and extension to the X-point radiator regime*, Oral
72. 9th International Workshop on Plasma Material Interaction Facilities for Fusion Research PMIF 2025, 2025/10/06-2025/10/08, Kyoto, Japan, S. Kajita, D. Nishijima, N. Ohno, H. Tanaka, I.G.J. Classen, Q. Shi, K. Fujii, M. Goto, *Cross-machine modeling of machine-learning based helium line intensities*, Oral 8 Oct 11:55 AM
73. 28th International Conference on Numerical Simulation of Plasmas (ICNSP 2025), 2025/11/12-2025/11/14, online, Irvine, CA, US, G.L. Derks, J.T.W. Koenders, H. Yang, H. Reimerdes, O. Fevrier, S.P. Kobussen, E.M.M. Kivits, B. Kool, A. Perek, C. Theiler, T.A. Wijkamp, M. van Berkel, E. Westerhof, S. Wiesen, TCV team, EUROfusion WPTE Team, *On the validation of dynamic models for (exhaust) control in Nuclear Fusion; a comparison to experiments in the TCV tokamak*, Oral Nov12th, 11:00-11:30
74. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, D. Maris, S. Wiesen, T. Ravensbergen, F.J. Artola, R.A. Pitts, S.Q. Korving, JOREK Team, *Improving dynamic simulations with JOREK for ITER detachment control: neutral collisions*, Poster P1-014
75. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, S. Dasbach, F. Subba, W. van Uytven, S. Van den Kerkhof, F. Maviglia, S. Wiesen, *Using SOLPS-NN for rapid exploration of the exhaust operational space for the new EU-DEMO design*, Poster P1-048
76. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, S. Dasbach, F. Subba, W. van Uytven, S. Van den Kerkhof, F. Maviglia, S. Wiesen, *Using SOLPS-NN for rapid exploration of the exhaust operational space for the new EU-DEMO design*, Oral Tu Session 2-4

77. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, H.J. de Blank, E. Westerhof, S. Wiesen, *Characterization of atom velocity distribution in the Magnum-PSI beam using SOLPS-ITER modelling*, Poster P2-030
78. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, K. Verhaegh, N. Osborne, D. Moulton, N. Lonigro, S. Mijin, D. Brida, P. Bryant, J. Harrison, S. Henderson, T. Wijkamp, K. Murray, H. Reimerdes, C. Theiler, TCV team, MAST-U Team, EUROfusion WPTE Team, *Plasma-molecule interactions as driver for divertor detachment*, Poster P1-047
79. 20th International Workshop on Plasma Edge Theory in Fusion Devices (PET-20, 2025), 2025/09/23-2025/09/26, Leuven, Belgium, K. Verhaegh, N. Osborne, D. Moulton, N. Lonigro, S. Mijin, D. Brida, P. Bryant, J. Harrison, S. Henderson, T. Wijkamp, K. Murray, H. Reimerdes, C. Theiler, TCV team, MAST-U Team, EUROfusion WPTE Team, *Plasma-molecule interactions as driver for divertor detachment*, Oral We Session 5-1

Positions: 39

1. M.R. de Baar, Member of the Fusion for Energy (F4E) Governing Board (since 2019), 2025
2. M.R. de Baar, Member of the Fusion for Energy (F4E) Technical Advisory Panel (since 2022), 2025
3. M.R. de Baar, Member International (Fusion) Diagnostics Advisory Panel, 2025
4. M.R. de Baar, Subchair DEMO Gate Review panel large aspect ratio (LAR), 2025
5. M.R. de Baar, Leader ITPA Real-time Diagnostics Subgroup (RT-SWG) (2018-2025), 2025
6. M.J. Pueschel, Member ITPA Transport and Confinement Topical Group, 2025
7. M.J. Pueschel, Member FSD Project Board, part of E-TASC Scientific Board (EUROfusion - Theory and Advanced Simulation Coordination), 2025
8. S. Wiesen, Member EUROfusion DEMO Central Team Topical group leader for Exhaust Plasma Science Division DCT/PSD (since 2021), 2025
9. S. Wiesen, Chair and EU Member ITPA Scrape Off Layer and Divertor Topical Group (since 2019, chair since 2025), 2025
10. E. Westerhof, National representative in the Fusion Expert Group of the European Commission (2024-2025), 2025
11. M.J. Pueschel, Member U.S. National Stellarator Coordinating Committee (since 2017), 2025
12. S. Wiesen, Research Topic Coordinator of EUROfusion WPTE RT-01 experiments: Seeded high-power JET-ITER baseline scenario (since 2022), 2025
13. S. Wiesen, ITER Scientist Fellow (ISFN) - ITER exhaust modelling (since 2016), 2025
14. S. Wiesen, Leading Coordinator of DSOL detachment task (since 2017), 2025
15. M.R. de Baar, Member team voor Meerjarig Missiegedreven Innovatieprogramma Kernenergie (MMIP), 2025
16. M.R. de Baar, Member PAC Kernenergie (policy advocacy coalition nuclear energy), 2025
17. A.J.H. Donné, Member FIRE Project Group (Forschungs- und Innovationsroadmap Fusionsenergie) of German Academy of Technical Sciences (ACATECH) (03/2025-02/2027), 2025
18. A.J.H. Donné, Chair Scientific and Technical Advisory Board General Fusion Inc., Canada (since 2024), 2025
19. A.J.H. Donné, Member International Advisory Board of the Institute of Solid State Physics, University of Latvia (ISSP-UL) (since 2022), 2025
20. A.J.H. Donné, Member Visiting/Evaluation Committee of the European Southern Observatory (2025), 2025
21. A.J.H. Donné, Member International Scientific Committee AAPPS-DPP Conference (Association of Asia Pacific Physical Societies) (since 2017), 2025
22. M.J. Pueschel, Lecturer at Ruhr University Bochum, Germany (since 2021), 2025

23. T.W. Morgan, Member Scientific Programme Committee International Conference on Plasma-Facing Materials and Components for Fusion Applications PFMC (since 2019), 2025
24. H.J. de Blank, Member of the Organizing Committee of the Carolus Magnus Summer School on Plasma and Fusion Energy Physics (since 2014), 2025
25. M.J. Pueschel, Member Scientific Organizing committee 2nd European Conference on Magnetic Reconnection in Plasmas (Torino, June 2025), 2025
26. M. van Berkel, Member Programme Committee 5th IAEA technical meeting on divertor concepts, Oct 28-31, 2025, 2025
27. E. Westerhof, Member Scientific/advisory committee 1st NNV Plasma Physics Symposium Rolduc 2025, 2025
28. M.J. Pueschel, Member NWO advisory committee Physics of Fluids and Soft Matter FSM (since 2021), 2025
29. S. Wiesen, Advisory Board Member Dutch Physics Council (since 2025), 2025
30. M.R. de Baar, Professor at Eindhoven University of Technology (since 2012), 2025
31. T.W. Morgan, Associate Professor Eindhoven University of Technology (since 2019), 2025
32. M. van Berkel, University Researcher Eindhoven University of Technology (since 2020), 2025
33. S. Wiesen, IBA member Compass-Upgrade IPP Prague (since 2023), 2025
34. M.R. de Baar, Secretary of the Cooperative Environment and Safety (CVM) TU/e Campus U.A., 2025
35. M.R. de Baar, Member of the Advisory Board FONTYS Applied Natural Sciences (since 2018), 2025
36. M.J. Pueschel, Lecturer at Eindhoven University of Technology (since 2021), 2025
37. H.J. de Blank, Lecturer Course series at Eindhoven University of Technology (since 2015), 2025
38. B. Tyburska-Pueschel, Teacher TUDelft course on Radiation Damage in Materials (H1 2025), 2025
39. B. Tyburska-Pueschel, Member Euratom Scientific and Technical Committee (since 2020), 2025

Public events and industry contacts: 3

1. Visitors ORSTED, offshore wind farms company, 2025/01/23, Eindhoven, Netherlands, M.R. de Baar, *DIFFER in a Nutshell*,
2. Gastles module Kernfusie bij VWO NLT (natuur, leven en technologie) Joke Smit College Amsterdam, 2025/03/07, Amsterdam, Netherlands, E. Westerhof, *Kernfusie onderzoek in Nederland (en Europa)*
3. FuseNet European Fusion Teacher Day 2025, Dutch local program: Fusie onderzoek in Nederland. Gezamenlijke presentatie door DIFFER en Technische Universiteit Eindhoven, 2025/10/10, Eindhoven, Netherlands, T.O.S.J. Bosman, *Fusie-onderzoek bij DIFFER*

Awards: 2

1. E.M.M. Kivits, *DISC PhD Thesis Award 2024 (3rd prize Dutch Institute for Systems and Control), Egmond aan Zee, Netherlands, 2025/03/20*
2. A.J.H. Donné, *2025 China Government Friendship Award for Contributions to Fusion Research and ASIPP (Institute for Plasma Physics of the Chinese Academy of Sciences), 2025/09/30*

Media appearances: 43

1. *Nederland brengt kernfusie dichterbij met zelfherstellende metalen in ultiem testlab*, Technisch Weekblad (TW), 2025/03/24, General coverage
2. *DIFFER researchers give an interesting insight into their work at the institute* (S.5, E.9 Climate and Society, 4 minute video starting 14:09), SBS6 Bouwen aan de Toekomst, 2025/03/29, Interview with M. Morbey, J. Gans
3. *DEMCON, Thorizon en VDL Groep bundelen krachten in ontwikkeling gesmoltenzoutreactor*, Duurzaam Ondernemen, 2025/01/08, General coverage
4. *Thorizon werkt met VDL en Demcon aan eerste reactor*, Energiea, 2025/01/09, General coverage
5. *VDL en Demcon werken mee aan ontwikkeling kernreactor met gesmolten zout als koeling*, Algemeen Dagblad, 2025/01/09, General coverage
6. *Dutch consortium to develop molten salt reactors*, World Nuclear News, 2025/01/09, General coverage
7. *VDL Groep werkt met techbedrijven aan eigen kernreactor met gesmolten zout*, De Telegraaf, 2025/01/09, General coverage
8. *VDL en Demcon werken mee aan ontwikkeling kernreactor met gesmolten zout als koeling*, Eindhovens Dagblad, 2025/01/09, General coverage
9. *Dutch firms Thorizon, DEMCON, and VDL partner to advance molten salt reactors*, Nuclear Engineering International magazine, 2025/01/10, General coverage
10. *Reactie Marco de Baar op bouw laserfusiefaciliteit China*, BNR Nieuwsradio, 2025/02/06, Interview with M. de Baar
11. *China zet grote stap voorwaarts met kernfusie: 'De beer is los'*, BNR Nieuwsradio, 2025/02/09, Interview with M. de Baar
12. *Een wasje draaien op kernfusie: in Amerika kan dat misschien over tien jaar al, denkt Eindhovens bedrijf DIFFER*, Eindhovens Dagblad (ED), 2025/02/15, Interview with M. de Baar
13. *Noord-Brabant investeert in gesmoltenzoutreactor, een kleine, relatief veilige kernreactor*, NRC, 2025/02/26, General coverage
14. *Provincie investeert bijna 4 miljoen in doorontwikkeling 'gesmolten zout reactor'*, Algemeen Dagblad (AD), 2025/02/26, General coverage
15. *Provincie investeert bijna 4 miljoen in doorontwikkeling 'gesmolten zout reactor'*, Eindhovens Dagblad (ED), 2025/02/26, General coverage
16. *Provincie Noord-Brabant investeert € 4 miljoen in doorontwikkeling gesmolten zout kernreactor*, Duurzaam-ondernemen.nl, 2025/02/26, General coverage
17. *Provincie investeert € 4 miljoen in doorontwikkeling gesmolten zout reactor*, Provincie Brabant, 2025/02/26, General coverage
18. *Kleine kerncentrales als troefkaart voor regio's: kansrijk, maar nog niet klaar*, RO magazine.nl, 2025/05/05, General coverage
19. *Hoe kernfusie nieuwe grenzen verlegt: Dutch Fusion Day 2025*, Engineersonline.nl, 2025/05/19, Interview with A. Turan
20. *Thorizon onderzoekt mogelijke locaties voor kernreactor*, Delingenieur.nl, 2025/04/08, General coverage
21. *Thorizon onderzoekt mogelijke locaties voor kernreactor*, NVDO Nederlandse Vereniging voor Doelmatig Onderhoud, 2025/05/23, General coverage
22. *Investeerdere en wetenschappers: 'Stop met polderen, versnel kernfusieontwikkeling nu'*, Eindhovens Dagblad, 2025/05/09, Interview with E. Westerhof
23. *The Complex Relationship Between Fusion Fuel and Lithium Walls*, Newswise, 2025/07/29, Interview with M. Morbey

24. *Comment le lithium murs piège le tritium dans les réacteurs de fusion révélés*, Issues.fr, 2025/07/29, Interview with M. Morbey
25. *The complex relationship between fusion fuel and lithium walls*, Space daily, 2025/07/30, Interview with M. Morbey
26. *How lithium walls trap fusion fuel - and what it means for the future of clean energy*, Knowridge.com, Australia, 2025/08/01, Interview with M. Morbey
27. *Vloeibaar lithium belooft duurzamere fusiecentrales*, Engineersonline.nl, 2025/08/20, Interview with M. Morbey
28. *Novel 'Super-X' design shows major advantages in handling hot exhaust of fusion energy*, TU/e News, 2025/09/05, Interview with B. Kool
29. *Novel 'Super-X' design shows major advantages in handling hot exhaust of fusion energy*, myScience, 2025/09/05, Interview with B. Kool
30. *Novel 'Super-X' design shows major advantages in handling hot exhaust of fusion energy*, EUROfusion, 2025/09/05, Interview with B. Kool
31. *10x cut in fusion reactor heat could be achieved with Super-X exhaust's long 'legs'*, Interesting Engineering (IE), 2025/09/06, Interview with B. Kool
32. *Fusione nucleare: la svolta del reattore Mast, con il sistema che abbatte il calore di 10 volte*, Scenari economici.it, 2025/09/06, Interview with B. Kool
33. *Fusieonderzoek boekt historische winst dankzij Nederlandse sleutelrol: "plasma is nu 10x koeler"*, Technisch Weekblad (TW), 2025/09/08, Interview with B. Kool
34. *Super-X' design shows major advantages in handling hot exhaust of fusion energy*, Phys.org, 2025/09/08, Interview with B. Kool
35. *Nederlandse onderzoekers brengen kernfusie stapje dichterbij met techniek die hitteprobleem kan oplossen*, Scientias.nl, 2025/09/12, Interview with B. Kool
36. *Innovatief 'Super-X' ontwerp voor hittebeheersing in de uitlaat van kernfusiereactoren*, Energienieuws.info, 2025/09/15, Interview with B. Kool
37. *Nee, kernfusie levert geen stroom binnen vijftien jaar*, EW Magazine, 2025/09/17, Interview with M. de Baar
38. *Vertraging en uitstel plagen het kernfusiemegaproject ITER - al is er nu ook goed nieuws*, NRC, 2025/10/08, Interview with M. de Baar
39. *Duitsland steekt miljarden in kernfusie en dit Nederlandse bedrijf levert de unieke technologie: 'Wij zoeken hier alle grenzen op'*, De Telegraaf, 2025/10/14, Interview with M. de Baar
40. *Breed draagvlak voor Thorizon's gesmoltenzoutreactor-demonstratiemodel in Nederland*, Impuls Zeeland.nl, 2025/11/24, General coverage
41. *Broad support for Thorizon's molten salt reactor demonstrator in the Netherlands*, Thorizon, 2025/11/24, General coverage
42. *Brede steun voor Thorizon's gesmolten zoutreactor-demonstrator in Nederland*, Duurzaam-ondernemen.nl, 2025/11/25, General coverage
43. *Noord-Brabant bouwt een nieuw type kernreactor*, Mooi Rooi.nl, 2025/12/02, General coverage

2. Scientific Output 2024: DIFFER Chemical Energy

Master theses report: 1

1. M. Özdemir, (Master thesis Eindhoven University of Technology:) *Machine learning for optimizing NOx production in heterogeneous plasma-catalysis*, Mentor(s): M.C.M. van de Sanden, J. Gans, 2025/06/17

PhD theses: 4

1. D. Sharma, *Influence of steps and kinks on CO and hydrogen adsorption, co-adsorption and dissociation on Co single crystal surfaces*, PhD thesis at the Eindhoven University of Technology, 2025/05/01, Promotor(s): M.C.M. van de Sanden
2. X. Chen, *The plasma-solid oxide interface: An experimental study of plasma-enhanced surface processes*, PhD thesis at the Eindhoven University of Technology, 2025/05/27, Promotor(s): M.C.M. van de Sanden; Co-promotor: G. Zhang
3. R.T.M. van Limpt, *Atomic layer deposition of nickel cobalt oxides: Thin film model systems to identify novel merits of ALD in electrocatalysis*, PhD thesis at the Eindhoven University of Technology, 2025/10/01, Promotor(s): M. Creatore; Co-promotor: M.N. Tsampas
4. Q. Shen, *Modeling of plasma-driven electrified chemical conversion processes by non-equilibrium kinetics*, PhD thesis at the Eindhoven University of Technology, 2025/10/29, Promotor(s): M.C.M. van de Sanden, V.L. Guerra

Publications in peer-reviewed scientific journals: 36

1. X. Zhou, C. Xu, X. Guo, P. Apostol, A. Vlad, R.A.J. Janssen, S. Er, *Computational and machine learning-assisted discovery and experimental validation of conjugated sulfonamide cathodes for lithium-ion batteries*, *Adv. Energy Mater.* 15 (2025) 2401658
2. Q. Shen, A. Pikalev, F.J.J. Peeters, J. Gans, M.C.M. van de Sanden, *Two-temperature model of the non-thermal chemical dissociation of CO₂*, *React. Chem. Eng.* 10 (2025) 146-157
3. M.C. Sorkun, B. Saliou, S. Er, *ChemPrice, a python package for automated chemical price search*, *Chem. Methods* 5 (2025) e202400005
4. O. Almora, G.C. Bazan, C.I. Cabrera, L.A. Castriotta, S. Erten-Ela, K. Forberich, K. Fukuda, F. Guo, J. Hauch, A.W.Y. Ho-Baillie, T.J. Jacobsson, R.A.J. Janssen, T. Kirchartz, R.R. Lunt, X. Mathew, D.B. Mitzi, M.K. Nazeeruddin, J. Nelson, A.F. Nogueira, U.W. Paetzold, B.P. Rand, U. Rau, T. Someya, C. Sprau, L. Vaillant-Roca, C.J. Brabec, *Device performance of emerging photovoltaic materials (version 5)*, *Adv. Energy Mater.* 15 (2025) 2404386
5. P.W.C. Groen, W.A. Bongers, J.F.J. Janssen, T.W.H. Righart, A.W. van de Steeg, A.J. Wolf, M.C.M. van de Sanden, F.J.J. Peeters, *Modelling forward vortex flow in a microwave plasma*, *Chem. Engineer. J.* 503 (2025) 158072

6. S. Hu, J. Wang, P. Zhao, J. Pascual, J.N. Wang, F. Rombach, A. Dasgupta, W.T. Liu, M.A. Truong, H. Zhu, M. Kober-Czerny, J.N. Drysdale, J.A. Smith, Z. Yuan, G.J.W. Aalbers, N.R.M. Schipper, J. Yao, K. Nakano, S. Turren-Cruz, A. Dallmann, M. Greyson Christoforo, J. Ball, D.P. McMeekin, K. Zaininger, Z. Liu, N.K. Noel, K. Tajima, W. Chen, M. Ehara, R.A.J. Janssen, A. Wakamiya, H.J. Snaith, *Steering perovskite precursor solutions for multijunction photovoltaics*, Nat. 639 (2025) 93-101
7. G.J.W. Aalbers, W.H.M. Remmerswaal, R.H.C. van den Heuvel, L. Bellini, L.M. Kessels, C.H.L. Weijtens, N.R.M. Schipper, M.M. Wienk, R.A.J. Janssen, *Functionalized substrates for reduced nonradiative recombination in metal-halide perovskites*, J. Phys. Chem. Lett. 16 (2025) 372-377
8. J. Wang, B. Branco, W.H.M. Remmerswaal, S. Hu, N.R.M. Schipper, V. Zardetto, L. Bellini, N. Daub, M.M. Wienk, A. Wakamiya, H.J. Snaith, R.A.J. Janssen, *Performance and stability analysis of all-perovskite tandem photovoltaics in light-driven electrochemical water splitting*, Nat. Commun. 16 (2025) 174
9. I.de Azpiazu Nadal, B. Branco, G.E.M. Tovar, J. Kerres, R.A.J. Janssen, S. Reynaud, V. Atanasov, *New highly sulfonated polythioethers as polyelectrolyte membranes for water electrolysis*, ACS Polym. Au 5 (2025) 145-154
10. K. Datta, S.C.W. van Laar, M. Taddei, C. Hidalgo, T. Kodalle, G.J. W. Aalbers, B. Lai, R. Li, N. Tamura, J.T.W. Frencken, S.V. Quiroz Monnens, R.J.E. Westbrook, D.J. Graham, C.M. Sutter-Fella, J. Correa-Baena, D.S. Ginger, M.M. Wienk, R.A.J. Janssen, *Local halide heterogeneity drives surface wrinkling in mixed-halide wide-bandgap perovskites*, Nat. Commun. 16 (2025) 1967
11. S. Makhlof, S.E. Amara, A. Amara, M. Cakmak, C. Tayran, H. Kheribot, A.Y. Behlali, *Structural, optoelectronic, magnetic, elastic, thermodynamic and thermoelectric properties of NaVSi half-Heusler alloys*, J. Mater. Chem. C 13 (2025) 17199-17220
12. N.R.M. Schipper, G.J.W. Aalbers, L. Bellini, S.V. Quiroz Monnens, L.M. Kessels, J.K. Wang, M.M. Wienk, R.A.J. Janssen, *The importance of conserving the stoichiometry of wide-bandgap perovskites in additive engineering*, ACS Appl. Energy Mater. 8 (2025) 14486-14497
13. Q.T. Zhang, M.M. Lao, Y.Y. Yu, X.Z. Ma, M. Li, Z.F. Fei, P.J. Dyson, S.F. Wang, D.Y. Min, *Manipulation of the electronic structure of ruthenium nanoclusters by Ni-N4 sites enhances the alkaline hydrogen evolution reaction*, Adv. Funct. Mater. 35 (2025) 2416071
14. A. Vass, M. Göltz, H. Ghanem, S. Rosiwal, T. Franken, R. Palkovits, G. Mul, M.N. Tsampas, G. Katsoukis, M. Altomare, *Pulsed-current operation enhances H₂O₂ production on a boron-doped diamond mesh anode in a zero-gap PEM electrolyzer*, ChemSusChem 18 (2025) e202401947
15. P.P. Kunturu, S. Bera, H. Johnson, M.N. Tsampas, *Scaled-up zero-gap photoelectrochemical device based on abundant materials for bias-free solar hydrogen production*, Artif. Photosynth. 1 (2025) 106-116
16. Y. Wang, G. Brocks, C. Tayran, S. Er, *Two-dimensional TiNBr as photocatalyst for overall water splitting*, Phys. Rev. Mater. 9 (2025) 025802
17. N. Daub, X. Zhang, N.J.L. van Rijswijk, P. da Silva, R.A.J. Janssen, *Supra-3-V nonaqueous redox-flow batteries based on simple terephthalonitrile anolytes*, ACS Appl. Energy Mater. 8 (2025) 15124-15133
18. G. He, A.F. Castro-Mendez, J. Diekmann, G.J.W. Aalbers, P. Foroz Sowmeeh, A. Singh, S.V. Quiroz Monnens, F. Pena-Camargo, M. Stolterfoht, B. Stannowski, H.C. Neitzert, R.A.J. Janssen, C.M. Wolff, D. Neher, F. Lang, *Point contacts in halide perovskite solar cells: from reduced interfacial recombination to increased ionic field screening*, EES Sol. 1 (2025) 775-785
19. S. Haghverdi Khamene, M. Creatore, M.N. Tsampas, *3D electrode surface engineering via atomic layer deposition of nickel oxide for improved water oxidation performance*, Chem. Engineer. J. Adv. 22 (2025) 100723
20. J. Shao, Y.T. Luo, H.L. Wu, J. Wang, X. Zhou, S. Er, S. Cao, H.Y. Sun, H.H. Pérez Garza, H. Zheng, H. Friedrich, L.K.E.A. Abdelmohsen, J.C.M. van Hest, *Designing polymersomes with surface-integrated nanoparticles through hierarchical phase separation*, Nat. Commun. 16 (2025) 2445

21. X. Han, P. Ren, D. Garcia Rodriguez, H. Wang, X. Yu, X. Zhou, J. Xu, X.D. Wen, Y. Yang, Y.W. Li, J.W. Niemantsverdriet, C.J. Weststrate, R. Gubo, *Distinct diffusion and recombination dynamics of atomic carbon and oxygen on face-centered cubic and body-centered cubic iron multilayers*, ACS Nano 19 (2025) 11120-1113225
22. C. Tayran, Y. Kadioglu, *Discovery of a new soft metallic monolayer BPt₂*, Physica B 705 (2025) 417052
23. N. Puthuval Prasad, S. Schneider, C. Maheu, C. Tian, J.P. Hofmann, J.M. Hensen, A. Bieberle-Hütter, *Enhancing photocurrent of bismuth manganate photoanodes with nanoislands of bismuth oxide*, ChemPhotoChem 9 (2025) e202500003
24. M.C. Sorkun, X. Zhou, J. Murigneux, N. Menegazzo, A.K. Narsaria, D. Thanoon, P.A.A. Klusener, K. Kaluskar, S. Shetty, E. Barmpoutsis, S. Er, *RedCat, an automated discovery workflow for aqueous organic electrolytes*, Digital Discov. 4 (2025) 1844-1855
25. H. Wang, D. Garcia Rodriguez, P.J. Ren, X. Li, X. Yu, J. Xu, X.D. Wen, Y. Yang, Y.W. Li, J.W. Niemantsverdriet, C.J. Weststrate, R. Gubo, *Dynamic reconfiguration and induced symmetry switching in iron carbide surface by adsorbed hydrogen*, ACS Mater. Lett. 7 (2025) 2541-2546
26. Q. Shen, A. Pikalev, F.J.J. Peeters, V. Guerra, M.C.M. van de Sanden, *Pinpointing energy transfer mechanisms in the quenching process of microwave air plasma*, J. Phys. D: Appl. Phys. 58 (2025) 275203
27. W.H.M. Remmerswaal, L.M. Kessels, B. Branco, G.G.F. van Huisseling, D. Zhang, M.M. Wienk, R.A.J. Janssen, *Analysis of interfacial losses and passivation strategies for narrow-bandgap perovskite solar cells*, Sol. RRL 9 (2025) 202500291
28. R.T.M. van Limpt, M.M. Lao, M.A. Verheijen, M.N. Tsampas, M. Creatore, *Thickness-dependent oxygen evolution reaction performance of atomic layer deposition cobalt oxide nickel-oxide heterostacks*, J. Phys. Chem. C 129 (2025) 12859-12869
29. L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, E.J. Devid, M.C.M. van de Sanden, *Microwave plasma-assisted CO₂ dissociation with methane and ethylene: Improved conversion and selectivity controlled by afterglow chemistry*, ACS Sustainable Chem. Eng. 13 (2025) 13085-13099
30. E.R. Mercer, C.F.A.M. van Deursen, F.J.J. Peeters, W.A. Bongers, F.M.A. Smits, M.C.M. van de Sanden, A. Bogaerts, *Preheating applied on a 915MHz CO₂ microwave plasma: Unlocking the potential for heat recycling in plasma systems*, Chem. Engineer. J. 522 (2025) 167294
31. A. Ranade, S. Bera, V. Mathayan, R.H.M. Timmer, J.W.M. Vernimmen, E. Zoethout, H.J.N. van Eck, M.N. Tsampas, *Nanostructured Ni-based alloys as electroactive porous transport layers for anion-exchange membrane water electrolysis*, ACS Sustainable Chem. Eng. 13 (2025) 15291-15301
32. S. Haghverdi Khamene, N. van Dalen, M.N. Tsampas, M. Creatore, *Tuning crystalline phase and electrochemical surface area of sulphurized nickel electrodes for hydrogen evolution reaction*, J. Phys. Chem. C 129 (2025) 17987-17997
33. P.T.P. Le, V. Ratovskii, A. Bieberle-Hütter, G. Koster, C. Baeumer, *In search for non precious metal oxide electrodes with the case of BaMoO₃ thin films for hydrogen evolution reaction*, Sci. Rep. 15 (2025) 37801
34. I.C. Oguz, N. Khossossi, M. Brunacci, H. Bucak, S. Er, *Machine learning-accelerated discovery of earth-abundant bimetallic electrocatalysts for the hydrogen evolution reaction*, ACS Catal. 15 (2025) 19461-19474
35. D. Sarkar, H. Ichou, L. Choubrac, S. Diring, N. Schneider, J. Bonin, N. Barreau, F. Odobel, M. Robert, *Advanced CIGS-mesoporous TiO₂ hybrid photocathode functionalized with cobalt quaterpyridine for solar-driven CO₂ reduction*, J. Mater. Chem. A 13 (2025) 38511-38517
36. S. Candan, V. Barton, H. Yang, C.F. López Cámara, P. Fortugno, H. Wiggers, M. Eriten, J. Andrews, J. Notbohm, C. Franck, *Design of a simple and rugged soft polydimethylsiloxane-carbon nanotube-graphene-based composite sensor*, Adv. Mater. Technol. 10 (2025) e70009

Invited seminars: 3

1. 2nd EUR PLASMA Science Summer School, 2025/06/22, Porquerolles, France, M.C.M. van de Sanden, *The greening of chemical conversion processes by means of plasma-assisted processes*
2. ELOBIO Summer School 2025: Chemicals from biomass, 2025/09/15-2025/09/19, Tartu, Estonia, M.N. Tsampas, *Electrochemical reactors and process development*
3. PLATHINIUM 2025 (PLASMA THIN film International Union Meeting), 2025/09/22-2025/09/26, Antibes, France, M.C.M. van de Sanden, *Electricity driven chemical conversion: the role plasma technology can play*, Oral PL2

Open software: 1

1. E. Zoethout, (Open software:) #62 *Operando IBA: real-time monitoring of electrocatalyst degradation*, 2025/08/17

Invited lectures at conferences and meetings: 13

1. TU/e Battery Workshop, 2025/01/23, Eindhoven, Netherlands, S. Er, *DIFFER Chemical Energy: Next-generation battery research*, Oral
2. ISPlasma2025 17th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials, 2025/03/03-2025/03/07, Nagoya, Japan, M.C.M. van de Sanden, *Looking back and forward: Plasma science and technology for a sustainable future*, Oral 06pA09I
3. Leiden University Faculty of Science, Van Marum Mini Symposium, 2025/02/05, Leiden, Netherlands, M.C.M. van de Sanden, X. Chen, A. Pikalev, A. Herrmann, V.L. Guerra, *Plasma-electrochemical cell interactions at DIFFER: a sensitive way of doing surface science experiments under plasma conditions*, Oral
4. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, M.N. Tsampas, *High temperature water electrolysis: Materials and hybrid approaches to unlock the potential of SOECs and PCECs*, Oral
5. FHI LabAutomation 2025, 2025/03/11, Den Bosch, Netherlands, S. Er, *Simulating and emulating self-driving labs*, Oral 3:00 PM
6. FYSICA 2025 (NNV) Shaping Society in Time, 2025/04/11, Leiden, Netherlands, S. Er, *Expert at Focus session 1 of NNV section for energy and climate: Long Duration Energy Storage (LDES)*
7. 14th SolTech Conference 2025, 2025/09/29-2025/10/01, Bayreuth, Germany, R.A.J. Janssen, *Material and device design for multijunction perovskite solar cells*, Oral
8. Advancing Materials Science Bridging Chemistry and Engineering for a Sustainable Future, 2025, 2025/11/03-2025/11/05, Doha, Qatar, R.A.J. Janssen, *Material and device design for multijunction perovskite solar cells*, Keynote Lecture
9. Materials for Sustainable Development Fall Conference (MATSUS 2025), 2025/10/20-2025/10/24, Valencia, Spain, R.A.J. Janssen, *Material and device design for multijunction perovskite solar cells*, Oral
10. MRS Fall Meeting 2025, 2025/11/30-2025/12/05, Boston, MA, USA, H. Wiggers, P. Fortugno, C.F. López Cámara, *Free-standing 2D carbon materials from plasma synthesis for energy applications*, Oral

11. MRS online workshop Bridging Plasma Science with Material Research on Functionalization and Synthesis, 2025/11/18-2025/11/19, Online, Boston, MA, USA, C.F. López Cámara, *Free-standing 2D carbon materials from plasma synthesis for energy applications, plasma-synthesized few-layer graphene: A rising functional material*, Oral Day1, 7:10 pm
12. Novel Electrode Material Workshop 2025 (in the framework of the REFINE project), 2025/02/18-2025/02/19, Thessaloniki, Greece, M.N. Tsampas, *Unconventional electrode material synthesis pathways for water electrolysis*, Oral Day1 10:30-11:30
13. V2025 Vacuum, Plasma, Surface Coating Conference, 2025/10/13-2025/10/16, Dresden, Germany, A. Bieberle-Hütter, T. Wilschut, G. Koster, C. Baeumer, M.F. Graswinckel, H. Hajihoseini, H.J.N. van Eck, G. Rijnders, M.R. de Baar, *Pulsed Laser Deposition for Energy - A new infrastructure at DIFFER: Opportunities and current research*, Oral

Oral and poster presentations at (international) conferences & meetings: 49

1. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, C. Tayran, S. Er, *Vanadium-enhanced tungsten for fusion reactors*, Poster
2. NWO Physics Veldhoven 2025 Beyond Boundaries, 2025/01/21-2025/01/22, Veldhoven, Netherlands, I.C. Oguz, N. Khossossi, M. Brunacci, *AI-driven bimetal catalyst discovery for green hydrogen*, Poster
3. 26th Netherlands' Catalysis and Chemistry Conference NCCC 2025, 2025/03/10-2025/03/12, Noordwijkerhout, Netherlands, C. Mepin, D. Sarkar, Q. van de Put, V.H. Le, O. Diaz-Morales, A. Bieberle-Hütter, *ATR-FTIR spectroscopy using waveguide-coupled multi-reflection crystal for water splitting*, Poster
4. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, M.C.M. van de Sanden, *Microwave plasma-based dry reforming of methane: Showing the role of radical reactions in the afterglow*, Poster PA23
5. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, J. Gans, Q. Shen, W.A. Bongers, K. Ehrhardt, I. Jevtovikj, S. Schunk, P. Hurtado, S. Titlbach, M.C.M. van de Sanden, *Microwave plasma NOx formation enhance with down-stream catalyst*, Poster PA11
6. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, X. Chen, A. Pikalev, M.C.M. van de Sanden, *Enhancing CO2 plasma conversion with in-situ oxygen removal using SOECs*, Poster PB19
7. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, Q. Shen, T.C. van Eeden, A. Pikalev, A.J. Hughes, V. Guerra, M.C.M. van de Sanden, *Boosting NOx production: A synergy of chemistry and vibrational kinetics*, Poster PB23
8. 13th NWO ICT.OPEN 2025, 2025/04/15-2025/04/16, Utrecht, Netherlands, M. van Apeldoorn, S. Er, *Simulating self-driving labs: Accelerating research and minimizing risks*, Poster
9. 13th NWO ICT.OPEN 2025, 2025/04/15-2025/04/16, Utrecht, Netherlands, D. Khalili Samani, S. Er, *Emulating self-driving labs: Enhance workflows and minimize potential risks*, Poster
10. FAIR Forum on Artificial Intelligence in Research 2025, 2025/04/28-2025/04/30, Miraflores de la Sierra, Spain, S. Er, *The use of AI for autonomous materials discovery*, Oral
11. EFDS's Plasma, Catalysis and Thin Films for Conversion Processes 2025, 2025/04/29, Marl, Germany, L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, E.J. Devid, M.C.M. van de Sanden, *Microwave plasma-based dry reforming of methane: Showing the role of radical reactions in the afterglow*, Poster PO003
12. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, S. Bera, P.P. Kunturu, H. Johnson, M.N. Tsampas, *Scalable integration of BiVO4 photoanodes in zero-gap membrane-based reactor for stable solar water splitting*, Poster

13. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, M. Lao, A. Ranade, P. Vernoux, M.N. Tsampas, *Bridging the gap between fundamental research and applications by initiating cathodic NiTi alloy catalyst into anion exchange membrane water electrolysis*, Poster
14. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, D.K. Chauhan, P.P. Kunturu, M.N. Tsampas, *Scalable and acid-resistance W-BiVO₄ photoanodes for photoelectrochemical glycerol valorization to value-added chemicals*, Poster
15. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, D. Zagoraios, M.N. Tsampas, *Exsolution concept for biomass valorization: The case of LSMNi for glucose electro-oxidation*, Poster
16. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, V. Mathayan, P. Kunturu, A. Ranade, E. Zoethout, B. Tyburska-Pueschel, M.N. Tsampas, *Development and evaluation of operando ion beam analysis for operando analysis of electrocatalytic processes*, Poster
17. NERA Away Day, 2025/05/20, Eindhoven, Netherlands, S. Er, *DIFFER Self-Driving Lab (SDL) program: Next step in energy materials discovery and development*, Oral
18. MECAREACT 2025 MEChAnisms of REACTions School on Vibrational and Electronic Spectroscopies, 2025/06/15-2025/06/20, Paris, France, C. Mempo, D. Sarkar, Q. van de Put, V.H. Le, O. Diaz-Morales, A. Bieberle-Hütter, *Advancing ATR-IR with waveguide for probing hematite electrode surfaces in PEC water splitting*, Poster
19. ISPC 26, 26th International Symposium on Plasma Chemistry 2025, 2025/06/15-2025/06/20, Minneapolis, MN, USA, Q. Shen, A. Pikalev, F.J.J. Peeters, V. Guerra, M.C.M. van de Sanden, *Insight into energy transfer and NO_x synthesis in the afterglow by chemical multi-temperature plasma modelling*, Poster P2.5.1
20. ISPC 26, 26th International Symposium on Plasma Chemistry 2025, 2025/06/15-2025/06/20, Minneapolis, MN, USA, Q. Shen, A. Pikalev, F.J.J. Peeters, V. Guerra, M.C.M. van de Sanden, *Boosting the NO_x production in microwave air plasma: A synergy of chemistry and vibrational kinetics* (Student Excellence Award Finalist), Oral Modeling-1 14:00
21. ISPC 26, 26th International Symposium on Plasma Chemistry 2025, 2025/06/15-2025/06/20, Minneapolis, MN, USA, L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, E.J. Devid, M.C.M. van de Sanden, *From CO₂ dissociation to dry reforming of methane in microwave discharges: Importance of the chemical kinetics in the afterglow*, Oral Conversion-3 14:45
22. ISPC 26, 26th International Symposium on Plasma Chemistry 2025, 2025/06/15-2025/06/20, Minneapolis, MN, USA, J. Gans, Q. Shen, W.A. Bongers, M.C.M. van de Sanden, *NO_x formation via microwave air plasma and down-stream catalyst*, Oral Conversion-5 10:45
23. ISPC 26, 26th International Symposium on Plasma Chemistry 2025, 2025/06/15-2025/06/20, Minneapolis, MN, USA, C.F.A.M. van Deursen, F.J.J. Peeters, F.M.A. Smits, M.C.M. van de Sanden, *Preheating in 915 MHz CO₂ Microwave plasma: Looking into heat recycling in plasma systems*, Oral Conversion-7 10:45
24. Final COST Innovators Grant IG18234 Conference on machine learning and multiscale modeling of nanocrystal catalysts (NanoCatML), 2025/07/16-2025/07/18, Budapest, Hungary, B. Terzin, B.F.H. van den Boorn, M. van Berkel, A. Bieberle-Hütter, *Microkinetic modeling of photoelectrochemical water oxidation*, Oral
25. International Conference on Phenomena in Ionized Gases (ICPIG XXXVI) 2025, 2025/07/20-2025/07/25, Aix-en-Provence, France, L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, E.J. Devid, M.C.M. van de Sanden, *Microwave plasma-based dry reforming of methane: Showing the role of radical reactions in the afterglow*, Oral Parallel session #10 11:20
26. 36th International Conference on Phenomena in Ionized Gases (ICPIG 2025), 2025/07/20-2025/07/25, Aix-en-Provence, France, C.F.A.M. van Deursen, E.R. Mercer, F.J.J. Peeters, F.M.A. Smits, W.A. Bongers, A. Bogaerts, M.C.M. van de Sanden, *Preheating applied on a 915 MHz CO₂ microwave plasma: Unlocking the potential for heat recycling in plasma systems*, Oral Parallel session #6 11:00

27. 36th International Conference on Phenomena in Ionized Gases (ICPIG 2025), 2025/07/20-2025/07/25, Aix-en-Provence, France, X. Chen, A. Pikalev, G.J. Zhang, M.C.M. van de Sanden, *Enhancing CO₂ plasma conversion with in-situ oxygen removal using SOECs*, Poster Tu-16
28. 36th International Conference on Phenomena in Ionized Gases (ICPIG 2025), 2025/07/20-2025/07/25, Aix-en-Provence, France, Q. Shen, A. Pikalev, J. Gans, A.J. Hughes, V. Guerra, M.C.M. van de Sanden, *Boosting the NO_x production in microwave air plasma: A synergy of chemistry and vibrational kinetics*, Poster Th-21
29. 36th International Conference on Phenomena in Ionized Gases (ICPIG 2025), 2025/07/20-2025/07/25, Aix-en-Provence, France, S.A. Starostin, T.C. van Eeden, M.C.M. van de Sanden, *Active species in the afterglow of MW N₂ plasma*, Poster M-45
30. 5th International Conference on Electrolysis (ICE) 2025, 2025/08/25-2025/08/29, Freiburg, Germany, M.N. Tsampas, A. Ranade, S. Bera, R.H.M. Timmer, J.W.M. Vernimmen, E. Zoethout, H.J.N. van Eck, *Nanostructured porous transport layers via helium plasma engineering for Enhanced AEMWE*, Oral
31. Future of Chips event Dawn of a new era, 2025/09/30, Eindhoven, Netherlands, B. Terzin, B.F.H. van den Boorn, N. Pan Tavares, A. Bieberle-Hütter, S. Weiland, *Microkinetic modeling of photoelectrochemical water splitting*, Poster
32. 76th Annual Meeting of the International Society of Electrochemistry 2025 From Basic Insights to Sustainable Technologies, 2025/09/07-2025/09/12, Mainz, Germany, D. Zagoraios, M.N. Tsampas, *Exsolution concept for biomass valorization: the case of LSMNi for glucose electro-oxidation*, Poster S10-091
33. 76th Annual Meeting of the International Society of Electrochemistry 2025 From Basic Insights to Sustainable Technologies, 2025/09/07-2025/09/12, Mainz, Germany, A. Ranade, S. Bera, R.H.M. Timmer, H.J.N. van Eck, M.N. Tsampas, *Nanostructuring Ni-based porous transport layers for anion exchange membrane water electrolysis*, Oral 6a 17:45
34. 76th Annual Meeting of the International Society of Electrochemistry 2025 From Basic Insights to Sustainable Technologies, 2025/09/07-2025/09/12, Mainz, Germany, A. Raman, A. Vass, H. Ghanem, S. Rosiwal, T. Franken, R. Palkovits, G. Mul, M.N. Tsampas, G. Katsoukis, M. Altomare, *Proof-of-concept of methane oxidation on boron-doped diamond anodes in a zero-gap PEM cell*, Poster S11-031
35. 76th Annual Meeting of the International Society of Electrochemistry 2025 From Basic Insights to Sustainable Technologies, 2025/09/07-2025/09/12, Mainz, Germany, D. Sarkar, C. Mempo, A. Bieberle-Hütter, *Operando infrared spectroscopy for investigating the photoelectrochemical water oxidation mechanism on hematite*, Poster S14-072
36. ELOBIO Summer School 2025: Chemicals from biomass, 2025/09/15-2025/09/19, Tartu, Estonia, D. Zagoraios, M.N. Tsampas, *Exsolution concept and beyond for biomass valorization*, Poster
37. PLATHINIUM 2025 (PLAsma THIN film International Union Meeting), 2025/09/22-2025/09/26, Antibes, France, T. Silva, S. Bera, C.D. Pintassilgo, A. Herrmann, S. Welzel, M.N. Tsampas, M.C.M. van de Sanden, V.L. Guerra, *Unraveling NO production in N₂-O₂ plasmas with 0D kinetic modeling and experimental validation*, Oral MODIDD2-O3-082
38. PLATHINIUM 2025 (PLAsma THIN film International Union Meeting), 2025/09/22-2025/09/26, Antibes, France, M.C.M. van de Sanden, G.J. Zhang, A. Pikalev, X. Chen, V. Guerra, *Enhancing CO₂ plasma conversion by in-situ oxygen removal using a Solid Oxide Electrochemical Cell (SOEC)*, Oral ITEC2-O1-135
39. PLATHINIUM 2025 (PLAsma THIN film International Union Meeting), 2025/09/22-2025/09/26, Antibes, France, T. Silva, L. Kuijpers, E. Baratte, V. Guerra, M.C.M. van de Sanden, J.P. Booth, O. Guaitella, *Assessing actinometry and line ratio techniques for species densities and electric field determination in DC glow discharges*, Poster MODIDD-P1-081
40. 20th Netherlands Process Technology Symposium 2025 (NPS 20), 2025/11/03-2025/11/04, Eindhoven, Netherlands, L. Kuijpers, C.F.A.M. van Deursen, Q. Shen, W.A. Bongers, E.J. Devid, M.C.M. van de Sanden, *Microwave plasma-based dry reforming of methane: Showing the role of radical reactions in the afterglow*, Oral PS14-2, 14:45

41. ChemAI 2025 Entering the fifth paradigm for chemistry and materials, 2025/11/21, Amsterdam, Netherlands, S. Er, *The use of AI for autonomous energy materials discovery*, Oral HIMS Parallel session
42. ChemAI 2025 Entering the fifth paradigm for chemistry and materials, 2025/11/21, Amsterdam, Netherlands, I.C. Oguz, N. Khossossi, M. Brunacci, H. Bucak, S. Er, *ML-Accelerated discovery of bimetallic HER catalysts*, Poster
43. AI for Secure, Safe, and Sustainable Molecules and Materials (AI4S3M2), 2025/11/24-2025/11/27, Leiden, Netherlands, N. Khossossi, *Automated AI-driven discovery frameworks for sustainable electrocatalysis*, Oral
44. AI for Secure, Safe, and Sustainable Molecules and Materials (AI4S3M2), 2025/11/24-2025/11/27, Leiden, Netherlands, I.C. Oguz, N. Khossossi, M. Brunacci, H. Bucak, S. Er, *ML-accelerated discovery of bimetallic HER catalysts*, Poster
45. CHAINS 2025, 2025/12/02-2025/12/03, Veldhoven, The Netherlands, C. Mempin, D. Sarkar, Q. van de Put, O. Diaz-Morales, A. Bieberle-Hütter, *Advancing ATR-IR with waveguide for probing hematite electrode surfaces in PEC water splitting*, Poster pitches #2
46. CHAINS 2025, 2025/12/02-2025/12/03, Veldhoven, The Netherlands, D. Sarkar, C. Mempin, O. Diaz-Morales, A. Bieberle-Hütter, *Unraveling water oxidation pathways on hematite via operando infrared spectroscopy*, Oral Chemical Conversion #2
47. 4TU.HTM at the M2i Community Conference 2025, 2025/12/08, Arnhem, Netherlands, N. Khossossi, *AI-driven discovery frameworks for sustainable electrocatalysis*, Oral
48. Accelerate Conference 2025, 2025/08/11-2025/08/14, Toronto, Canada, S. Er, *Simulating self-driving labs: A virtual framework for smarter automation*, Oral
49. Annual Meeting Japan Society of Plasma Science and Nuclear Fusion Research (JSPF) 2025, 2025/12/01-2025/12/04, Kyoto, Japan, Y. Zeng, S. Lin, Q.Y. Xue, Q. Shi, Y. Hayashi, D. Sarkar, A. Bieberle-Hütter, S. Kajita, *Formation of iron oxide nanostructure under oxygen atmosphere using Pulsed Laser Deposition (PLD)*, Poster

Public events and industry contacts: 3

1. High Tech NL te gast bij VSParticle, 2025/02/20, Delft, Netherlands, M.N. Tsampas, *Automated material labs using digital material synthesis*
2. Plasma powers the future, yearly VENI and VSI/e Theme Evening, 2025/10/03, Eindhoven, Netherlands, M.C.M. van de Sanden, *Plasma technology: A key enabling technology providing solutions for societal challenges*
3. het GroeneWaterstofHuisNL 2025, 2025/11/06-2025/11/07, Hilversum, Netherlands, M.C.M. van de Sanden, *Waterstof in Nederland, panelgesprek met Richard van de Sanden, Hyung-ja de Zeeuw, Eric Rath, Karlo van Dam en Tara van Abkoude*

Positions, including editorships: 33 / Number of editorships: 7

1. M.C.M. van de Sanden, Member of the EASAC Energy Steering Panel (European Academies) (since 2014), 2025
2. M.C.M. van de Sanden, Captain of Science Topteam Energie, Board of Topsector Energie (2023-2030), 2025
3. M.C.M. van de Sanden, Senior Advisory Board Member of Plasma Sources: Science and Technology (since 2005, Senior since 2014), 2025
4. M.C.M. van de Sanden, Member of the Editorial Board of the Journal "Applied Sciences" (since 2016), 2025
5. M.C.M. van de Sanden, Editorial Board member of the journal Global Transitions (since 2018), 2025

6. M.C.M. van de Sanden, International Advisory Board for the journal Plasma Processes and Polymers (since 2002), 2025
7. S. Er, Member editorial board AI for Science (since 2025), 2025
8. A.Bieberle-Hütter, COST Action 22123 EU-MACE Management committee member for the Netherlands (European Materials Acceleration Center for Energy, 2023-2027), 2025
9. A.Bieberle-Hütter, Subprogram leader: Materials Science, European joined program EERA AMPEA (since 2019), 2025
10. A.Bieberle-Hütter, Member OTP (2024 round) Jury Open Technology Programme (OTP) of NWO domain Applied and Engineering Sciences (AES) (since 2025), 2025
11. M.C.M. van de Sanden, Member Board NWO Domain Applied and Engineering Sciences (AES, in Dutch: TTW) (since 2021), 2025
12. A.P.H. Goede, Member of the Technical Advisory Board of the German BMBF KOPERNIKUS 10 year Programme P2X (since 2016), 2025
13. A.P.H. Goede, Fellow of European Physical Society (since 2011), 2025
14. M.C.M. van de Sanden, Fellow of the International Plasma Chemistry Society (since 2017), 2025
15. A.Bieberle-Hütter, Member editorial board Journal of Physics: Energy (since 2022), 2025
16. A.Bieberle-Hütter, Member editorial board of the Dutch physics.org website (since 2018), 2025
17. A.Bieberle-Hütter, Member Advisory board Raad voor de Scheikunde (Dutch Chemistry Council) (since 2020), 2025
18. S. Er, Member NWO Research Community for Chemistry Fundamentals and Methods of Chemistry, 2025
19. M.C.M. van de Sanden, Parttime professorship in the Department EIRES (since 2011 after fulltime since 2000), 2025
20. S. Er, Member TU/e-EIRES Management Team, 2025
21. S. Er, Member Scientific Advisory Board TU/e Future Chemistry program (since 2025)
22. S. Er, Member Scientific Integrity Liaison Team, between DIFFER and NWO, 2025
23. S. Er, Member NWO Physics Research Community Nano, Quantum and Materials, 2025
24. S. Er, Member NWO Research Community for Chemistry of Materials, 2025
25. A.Bieberle-Hütter, Member NWO Chemistry Research Communities Chemistry of Materials and Chemical Conversion, 2025
26. A.Bieberle-Hütter, Member NWO Theme committee Materials Science (vision document Dutch materials) (since 2023), 2025
27. M.C.M. van de Sanden, Member KNAW Klimaat Klankbordgroep (since 2021), 2025
28. M.C.M. van de Sanden, Member of the Royal Netherlands Academy of Arts and Sciences (KNAW) (since 2013), 2025
29. D. van Walderveen, Member NERA Working group, 2025
30. S. Er, Member KNCV Royal Netherlands Chemical Society (since 2024), 2025
31. S. Er, Member KIVI Koninklijk Instituut Van Ingenieurs (since 2024), 2025
32. S. Er, Member American Chemical Society (ACS) (since 2025), 2025
33. S. Er, Member Materials Research Society (MRS) (since 2025), 2025

Awards: 1

1. M.C.M. van de Sanden, *Plasma Materials Science Hall of Fame Prize 2024 (17th ISPlasma2025, Center for Low-temperature Plasma Sciences, Nagoya University, Japan)*, 2025/03/06

Media appearances: 7

1. *Vliegen zonder uitstoot; is dit de oplossing?*, Universiteit van Nederland, 2025/01/19, Interview with T. van Eeden
2. *EngD: Invest in yourself by working and learning*, Carrière Magazine TU/e, 2025/03/01, Interview with M. van Apeldoorn
3. *DIFFER researchers give an interesting insight into their work at the institute* (S.5, E.9 Climate and Society, 4 minute video starting 14:09), SBS6 Bouwen aan de Toekomst, 2025/03/29, Interview with M. Morbey, J. Gans
4. *EngD: Invest in yourself by working and learning*, U today (University of Twente), 2025/06/26, Interview with M. van Apeldoorn
5. *Ruim 45 miljoen euro voor verduurzaming industrie met groene waterstof (project HyCARB)*, Duurzaam Actueel.nl, 2025/07/24, General coverage
6. *Efficiënt groene waterstof produceren door middel van watersplitsing*, Engineeringnet.be, 2025/11/04, Interview with D. Sarkar
7. *DIFFER ontwikkelt nieuwe methode voor efficiënte productie groene waterstof*, Solarmagazine.nl, 2025/11/12, Interview with D. Sarkar

3. Scientific Output DIFFER: Facilities & Instrumentation 2025

Publications in peer-reviewed scientific journals: 10

[Apart from 1st ref., it concerns Research Departments papers co-authored by members F&I]

1. P.W.C. Groen, W.A. Bongers, J.F.J. Janssen, T.W.H. Righart, A.W. van de Steeg, A.J. Wolf, M.C.M. van de Sanden, F.J.J. Peeters, *Modelling forward vortex flow in a microwave plasma*, Chem. Engineer. J. 503 (2025) 158072
2. M.J.H. Cornelissen, J. Vernimmen, J.D.E. Verstappen, E. Zoethout, I.G.J. Classen, J. Beckers, T.W. Morgan, *Erosion enhancement by impurity entrainment in the highly collisional plasmas of Magnum-PSI*, Nucl. Fusion 65 (2025) 026009
3. M.J.H. Cornelissen, B. Tyburska-Pueschel, M. Rasinski, S. Brons, E. Zoethout, D. Dorow-Gerspach, S. Brezinsek, M. Wirtz, G. Pintsuk, T.W. Morgan, J. Beckers, *High erosion and re-deposition rates of tungsten in the highly collisional plasmas of Magnum-PSI*, Nucl. Fusion 65 (2025) 026008
4. D. Hwangbo, S. Feng, S. Kajita, H. Tanaka, R. Zhang, Y. Hayashi, M. Morbey, R.H.M. Timmer, J.W.M. Vernimmen, J. Scholten, T.W. Morgan, *Formation of hot spots and arc ignition on tungsten with nano-tendril bundles under high-density hydrogen plasma exposure*, Sci. Rep. 15 (2025) 7903
5. J.G.A. Scholte, R.S. Al, D. Horsely, M. Iafrati, A. Manhard, E. Martelli, M. Morbey, S. Roccella, J.W.M. Vernimmen, T.W. Morgan, *Liquid metal droplet ejection through bubble formation under hydrogen plasma and radical exposure*, J. Fusion Energy 44 (2025) 22
6. Y. Hayashi, H. Tanaka, S. Kajita, N. Ohno, D. Hwangbo, J.W.M. Vernimmen, J. Scholten, H.J. van der Meiden, I.G.J. Classen, T.W. Morgan, *Dynamic response of atomic processes in detached helium plasma induced by high-density transient pulse in Magnum-PSI*, Nucl. Fusion 65 (2025) 086013
7. H. Khan, A. Razazzadeh, M. Shamekhi, G.H. Peshherbe, M.J. Jung, S. Bera, S.H. Kwon, *Tuning the bifunctional properties of an α -Fe₂O₃/Fe₂TiO₅/Pt heterojunction photoelectrode for light-induced water oxidation and oxygen reduction activity*, J. Mater. Chem. A 13 (2025) 37897-37911
8. J.Y. Kim, D. Kim, Y.W. Kim, S. Bera, H.J. Lee, Y.S. Park, W.J. Lee, *Effect of substrate temperature on the structure and HOR activity of ALD-synthesized Ru nanoparticles for alkaline membrane exchange fuel cells*, Appl. Surf. Sci. 714 (2025) 164377
9. P.P. Kunturu, S. Bera, H. Johnson, M.N. Tsampas, *Scaled-up zero-gap photoelectrochemical device based on abundant materials for bias-free solar hydrogen production*, Artif. Photosynth. 1 (2025) 106-116
10. A. Ranade, S. Bera, V. Mathayan, R.H.M. Timmer, J.W.M. Vernimmen, E. Zoethout, H.J.N. van Eck, M.N. Tsampas, *Nanostructured Ni-based alloys as electroactive porous transport layers for anion-exchange membrane water electrolysis*, ACS Sustainable Chem. Eng. 13 (2025) 15291-15301

Professional publications: 1

[concerns Research Departments publication co-authored by member F&I]

1. M.R. de Baar, H.J.N. van Eck, T.W. Morgan, B. Tyburska-Pueschel, *Creating a box for the Sun with fusion reactors*, Cheshire, UK, The Innovation Platform magazine 22 (2025) 140-143

Open Software: 1

1. E. Zoethout, (Open software:) #62 *Operando IBA: real-time monitoring of electrocatalyst degradation*, 2025/08/17

Invited lectures at conferences and meetings: 2

[concerns Research Departments presentations co-authored by members F&I]

1. 21st International Symposium on Laser-Aided Plasma Diagnostics (LAPD 2025), 2025/09/01-2025/09/05, Saillon, Switzerland, K. Schutjes, K.J. Loring, J.W.M. Vernimmen, I.G.J. Classen, Magnum-PSI team, *TALIF and CARS on measurements on fusion-relevant linear plasma devices*, Oral T1
2. V2025 Vacuum, Plasma, Surface Coating Conference, 2025/10/13-2025/10/16, Dresden, Germany, A. Bieberle-Hütter, T. Wilschut, G. Koster, C. Baeumer, M.F. Graswinckel, H. Hajihoseini, H.J.N. van Eck, G. Rijnders, M.R. de Baar, *Pulsed Laser Deposition for Energy - A new infrastructure at DIFFER: Opportunities and current research*, Oral

Oral and poster presentations at (international) conferences & meetings: 14

[Apart from 1st ref., it concerns Research Departments presentations co-authored by members F&I]

1. 9th International Workshop on Plasma Material Interaction Facilities for Fusion Research PMIF 2025, 2025/10/06-2025/10/08, Kyoto, Japan, H.J.N. van Eck, I.G.J. Classen, M.J.H. Cornelissen, J. Hargreaves, K. Loring, M. Morbey, T.W. Morgan, C.J.D. Robben, K. Schutjes, B. Tyburska-Püschel, DIFFER Team, *Recent developments and experiments at DIFFER's PSI facilities*, Oral 6 Oct 10:40 AM
2. 51st EPS Conference on Plasma Physics, 2025/07/07-2025/07/11, Vilnius, Lithuania, Y. Volkova, I.E. Garkusha, I.G.J. Classen, H.J. van der Meiden, J.W.M. Vernimmen, V. Makhelai, S.S. Herashchenko, Y.V. Petrov, N.V. Kulik, D.V. Yeliseyev, P.B. Shevchuk, *Thomson scattering system for extreme plasma-surface interaction studies in QSPA*, Poster 4P-303
3. IBA-PIXE 2025 Joint conferences 27th Ion Beam Analysis (IBA) 19th Particle-Induced X-ray Emission (PIXE), 2025/08/17-2025/08/22, Montreal, Canada, C.J.D. Robben, J.A.G. van Kesteren, R.H.M. Timmer, W. Arnold Bik, M. Morbey, T.W. Morgan, B. Tyburska-Pueschel, *Dynamic deuterium transport measurements using operando ion beam analysis in Upgraded Pilot-PSI*, Oral #139
4. IBA-PIXE 2025 Joint conferences 27th Ion Beam Analysis (IBA) 19th Particle-Induced X-ray Emission (PIXE), 2025/08/17-2025/08/22, Montreal, Canada, B. Tyburska-Pueschel, V. Mathayan, E. Zoethout, P. Kunturu, A. Ranade, M.N. Tsampas, *Operando IBA: real-time monitoring of electrocatalyst degradation*, Oral #62
5. 1st NNV Plasma Physics Symposium Rolduc 2025, 2025/04/02-2025/04/03, Kerkrade, Netherlands, K. Schutjes, I.G.J. Classen, J.W.M. Vernimmen, H.J. van der Meiden, Magnum-PSI team, *CARS Diagnostic for measuring rovibrational populations of hydrogen in divertor-relevant plasmas: Development, calibration, and first results*, Oral O1
6. 26th Netherlands' Catalysis and Chemistry Conference NCCC 2025, 2025/03/10-2025/03/12, Noordwijkerhout, Netherlands, C. Mempin, D. Sarkar, Q. van de Put, V.H. Le, O. Diaz-Morales, A. Bieberle-Hütter, *ATR-FTIR spectroscopy using waveguide-coupled multi-reflection crystal for water splitting*, Poster

7. 13th NWO ICT.OPEN 2025, 2025/04/15-2025/04/16, Utrecht, Netherlands, M. van Apeldoorn, S. Er, *Simulating self-driving labs: Accelerating research and minimizing risks*, Poster
8. 13th NWO ICT.OPEN 2025, 2025/04/15-2025/04/16, Utrecht, Netherlands, D. Khalili Samani, S. Er, *Emulating self-driving labs: Enhance workflows and minimize potential risks*, Poster
9. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, S. Bera, P.P. Kunturu, H. Johnson, M.N. Tsampas, *Scalable integration of BiVO₄ photoanodes in zero-gap membrane-based reactor for stable solar water splitting*, Poster
10. 2nd ElectroChemical National Symposium ECNS 2025, 2025/05/12, Utrecht, Netherlands, V. Mathayan, P. Kunturu, A. Ranade, E. Zoethout, B. Tyburska-Pueschel, M.N. Tsampas, *Development and evaluation of operando ion beam analysis for operando analysis of electrocatalytic processes*, Poster
11. MECAREACT 2025 MEChAnisms of REACTions School on Vibrational and Electronic Spectroscopies, 2025/06/15-2025/06/20, Paris, France, C. Mempo, D. Sarkar, Q. van de Put, V.H. Le, O. Diaz-Morales, A. Bieberle-Hütter, *Advancing ATR-IR with waveguide for probing hematite electrode surfaces in PEC water splitting*, Poster
12. 5th International Conference on Electrolysis (ICE) 2025, 2025/08/25-2025/08/29, Freiburg, Germany, M.N. Tsampas, A. Ranade, S. Bera, R.H.M. Timmer, J.W.M. Vernimmen, E. Zoethout, H.J.N. van Eck, *Nanostructured porous transport layers via helium plasma engineering for Enhanced AEMWE*, Oral
13. 76th Annual Meeting of the International Society of Electrochemistry 2025 From Basic Insights to Sustainable Technologies, 2025/09/07-2025/09/12, Mainz, Germany, A. Ranade, S. Bera, R.H.M. Timmer, H.J.N. van Eck, M.N. Tsampas, *Nanostructuring Ni-based porous transport layers for anion exchange membrane water electrolysis*, Oral 6a 17:45
14. PLATHINIUM 2025 (PLASma THIN film International Union Meeting), 2025/09/22-2025/09/26, Antibes, France, T. Silva, S. Bera, C.D. Pintassilgo, A. Herrmann, S. Welzel, M.N. Tsampas, M.C.M. van de Sanden, V.L. Guerra, *Unraveling NO production in N₂-O₂ plasmas with 0D kinetic modeling and experimental validation*, Oral MODIDD2-03-082

Media appearances: 5

1. *EngD: Invest in yourself by working and learning*, Carrière Magazine TU/e, 2025/03/01, Interview with M. van Apeldoorn
2. *Nederland brengt kernfusie dichterbij met zelfherstellende metalen in ultiem testlab*, Technisch Weekblad (TW), 2025/03/24, General coverage
3. *250 bedrijven staan in de rij voor techniekstudenten: 'Talent behouden voor het vakgebied en de Brainportregio'*, Eindhovens Dagblad (ED), 2025/04/25, Interview with F. Janssen, J. Antonis
4. *EngD: Invest in yourself by working and learning*, U today (University of Twente), 2025/06/26, Interview with M. van Apeldoorn
5. *Duitsland steekt miljarden in kernfusie en dit Nederlandse bedrijf levert de unieke technologie: 'Wij zoeken hier alle grenzen op'*, De Telegraaf, 2025/10/14, Interview with M. de Baar