



DIFFER ANNUAL REPORT 2019

APPENDIX



APPENDIX

*This appendix to the DIFFER annual report 2019 lists the scientific output at DIFFER.
The annual report and appendices can be found at www.differ.nl/about-us/annual-reports*

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Media appearances: 3

1. Gerard & Anton Award-winnaar Chromodynamics: 'Beter productieproces door camera voor samenstelling materialen', *Innovation Origins*, 2019/07/16, General coverage
2. Metropoolregio Eindhoven: Samen blijven werken aan een sterke toekomst, *Eindhovens Dagblad*, 2019/05/11, General coverage
3. Hoe de wetenschap werd overgeslagen bij het klimaatberaad, *Trouw*, 2019/10/19, Interview with M.C.M. van de Sanden

Fusion Energy theme

PhD theses: 5

1. T.C. Blanken, *Model-based estimation and control of the particle distribution and discharge supervision in nuclear fusion reactors*, PhD thesis at the Eindhoven University of Technology, 2019/01/21, Promotor: M.R. de Baar, M. Heemels
2. K. Jesko, *Studying divertor relevant plasmas in linear devices: experiments and transport code modelling*, PhD thesis at the Eindhoven University of Technology, 2019/01/10, Promotor: M.C.M. van de Sanden
3. R. Perillo, *Plasma chemistry in divertor relevant plasmas*, PhD thesis at the Eindhoven University of Technology, 2019/10/07, Promotor: M.R. de Baar, M.C.M. van de Sanden
4. P. Rindt, *The potential of liquid-metal 3D-printed heat shields for fusion reactors*, PhD thesis at the Eindhoven University of Technology, 2019/07/01, Promotor: N.J. Lopes Cardozo, M.C.M. van de Sanden
5. B. Vanovac, *Low-frequency inter-ELM pedestal modes at ASDEX upgrade*, PhD thesis at the Eindhoven University of Technology, 2019/01/30, Promotor: A.J.H. Donné

BSc theses: 1

1. W.J. Rutten, (*Bachelor thesis Eindhoven University of Technology*;) *H/Ar Actinometry in the nano-PSI*, 2019, Mentor: S.C. Wang

Publications in peer-reviewed scientific journals: 54

1. J. van den Berg, H.J. van der Meiden, J.W.M. Vernimmen, I.G.J. Classen, *Thomson scattering near the high-fluence target surface of the Magnum-PSI linear plasma generator*, *J. Instrum.* 14 (2019) C10041
2. W. Biel, R. Albanese, R. Ambrosino, M. Ariola, M. van Berkel, I. Bolshakova, K.J. Brunner, R. Cavazzana, M. Cecconello, S. Conroy et al., *Diagnostics for plasma control - From ITER to DEMO*, *Fusion Eng. Des.* 146 (2019) 465-472
3. T.C. Blanken, F. Felici, C. Galperti, O. Kudlacek, F. Janky, A. Mlynek, L. Giannone, P.T. Lang, W. Treutterer, M.R. de Baar et al., *Model-based real-time plasma electron density profile estimation and control on ASDEX Upgrade and TCV*, *Fusion Eng. Des.* 142 (2019) 111211

4. T.C. Blanken, F. Felici, C. Galperti, T. Vu, M. Kong, O. Sauter, M.R. de Baar, EUROfusion MST1 Team, TCV team, Real-time plasma state monitoring and supervisory control on TCV, *Nucl. Fusion* 59 (2019) 026017
5. H. van den Brand, W.A. Bongers, J. Stober, W. Kasperek, D. Wagner, N.J. Doelman, M.A. Klop, L. Giannone, M. Reich, E. Westerhof et al., Inline ECE measurements for NTM control on ASDEX Upgrade, *Nucl. Fusion* 59 (2019) 016013
6. W.Q. Chen, X.Z. Xiao, B. Pang, S.S. Si, Y.Z. Jia, B. Xu, T.W. Morgan, W. Liu, Y.L. Chiu, Irradiation hardening induced by blistering in tungsten due to low-energy high flux hydrogen plasma exposure, *J. Nucl. Mater.* 522 (2019) 11-18
7. T.Y. Chen, A.C. Rousso, S.Q. Wu, B.M. Goldberg, H.J. van der Meiden, Y.G. Ju, E. Kolemen, Time-resolved characterization of plasma properties in a CH₄/He nanosecond-pulsed dielectric barrier discharge, *J. Phys. D: Appl. Phys.* 52 (2019) 18LT021
8. S. Coda, M. Agostini, R. Albanese, S. Alberti, E. Alessi, S. Allan, G.M.D. Hogeweij, A. Perek, T. Ravensbergen, W.A.J. Vijvers et al., Physics research on the TCV tokamak facility: from conventional to alternative scenarios and beyond, *Nucl. Fusion* 59 (2019) 112023
9. V.I. Dagnelie, J. Citrin, F. Jenko, M.J. Püschel, T. Görler, D. Told, H. Doerk, Growth rates of ITG modes in the presence of flow shear, *Phys. Plasmas* 26 (2019) 012502
10. A.J.H. Donné, The European roadmap towards fusion electricity, *Phil. Transact. A* 377 (2019) 20170432
11. H.J.N. van Eck, G.R.A. Akkermans, S. Alonso van der Westen, D.U.B. Aussems, M. van Berkel, S. Brons, I.G.J. Classen, H.J. van der Meiden, T.W. Morgan, M.J. van de Pol et al., High-fluence and high-flux performance characteristics of the superconducting Magnum-PSI linear plasma facility, *Fusion Eng. Des.* 142 (2019) 26-32
12. N. Ezumi, T. Iijima, M. Sakamoto, Y. Nakashima, M. Hirata, M. Ichimura, R. Ikezoe, T. Imai, T. Kariya, R. Perillo et al., Synergistic effect of nitrogen and hydrogen seeding gases on plasma detachment in the GAMMA 10/PDX tandem mirror, *Nucl. Fusion* 59 (2019) 066030
13. J. Garcia, R. Dumont, J. Joly, J. Morales, L. Garzotti, T. Bache, Y. Baranov, F. Casson, J. Citrin, A. Ho et al., First principles and integrated modelling achievements: towards trustful fusion power predictions for JET and ITER, *Nucl. Fusion* 59 (2019) 086047
14. L. Garzotti, C. Challis, R. Dumont, D. Frigione, J. Graves, E. Lerche, J. Mailloux, M. Mantsinen, F. Rimini, M. Tsalas et al., Scenario development for D-T operation at JET, *Nucl. Fusion* 59 (2019) 076037
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16. Y. Hayashi, N. Ohno, H.J. van der Meiden, J. Scholten, S. Kajita, J. van den Berg, R. Perillo, J. Vernimmen, T. Morgan, Application of Ion Sensitive Probe to High Density Plasmas in Magnum-PSI, *Plasma Fusion Res.* 14 (2019) 1202135
17. A. Ho, J. Citrin, F. Auriemma, C. Bourdelle, F.J. Casson, H.T. Kim, P. Manas, G. Szepesi, H. Weisen, JET Contributors, Application of Gaussian process regression to plasma turbulent transport model validation via integrated modelling, *Nucl. Fusion* 59 (2019) 056007
18. Y.Z. Jia, W. Liu, B. Xu, S.L. Qu, T.W. Morgan, Surface nano structures on W surface exposed to low-energy high flux D plasma, *Nucl. Instr. Meth. Phys. Res. B* 438 (2019) 26-30
19. E. Joffrin, S. Abduallev, M. Abhangi, P. Abreu, V. Afanasev, J. Citrin, A. Ho, G.M.D. Hogeweij, M. Marin, G. van Rooij et al., Overview of the JET preparation for deuterium-tritium operation with the ITER like-wall, *Nucl. Fusion* 59 (2019) 112021
20. R. Keppens, J.P. Goedbloed, J.B. Durrive, Waves in a warm pair plasma: a relativistically complete two-fluid analysis, *J. Plasma Phys.* 85 (2019) 905850408
21. R. Keppens, J.P. Goedbloed, A fresh look on waves in ion-electron plasmas, *Front. Astron. Space Sci.* 2019 (2019) 00011
22. R. Keppens, J.P. Goedbloed, Wave modes in a cold pair plasma: the complete phase and group diagram point-of-view, *J. Plasma Phys.* 85 (2019) 175850101
23. B. Labit, T. Eich, G. Harrer, E. Wolfrum, M. Bernert, M.G. Dunne, L. Frassinetti, G.M.D. Hogeweij, A. Perek, B. Vanovac et al., Dependence on plasma shape and plasma fueling for small edge-localized mode regimes in TCV and ASDEX Upgrade, *Nucl. Fusion* 59 (2019) 086020

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26. S. Longo, M.C.M. van de Sanden, P. Diomede, Fokker-Planck equation for chemical reactions in plasmas, *Rend. Lincei* 30 (2019) 25-30
27. G.F. Matthews, R.E. Nygren, T.W. Morgan, S.A. Silburn, P.R. Cooper, R. Otin, A. Tallarigo, Magnum PSI team, Testing of a high temperature radiatively cooled Li/Ta heat pipe in Magnum-PSI, *Fusion Eng. Des.* 146 (2019) 482-485
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31. C. Onwudinanti, I. Tranca, T.W. Morgan, S. Tao, Tin, the enabler - Hydrogen diffusion into ruthenium, *Nanomaterials* 9 (2019) 129
32. J. van Oosterhout, C.J.M. Heemskerk, H. Boessenkool, M.R. de Baar, F.C.T. van der Helm, D.A. Abbink, Haptic Assistance Improves Tele-manipulation With Two Asymmetric Slaves, *IEEE Trans. Haptics* 12 (2019) 141 - 153
33. A. Perek, W.A.J. Vijvers, Y. Andrebe, I.G.J. Classen, B.P. Duval, C. Galperti, J.R. Harrison, B. Linehan, T. Ravensbergen, K. Verhaegh et al., MANTIS: A real-time quantitative multispectral imaging system for fusion plasmas, *Rev. Sci. Instrum.* 90 (2019) 123514
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35. R. Perillo, R. Chandra, G.R.A. Akkermans, I.G.J. Classen, S.Q. Korving, Magnum PSI team, Investigating the effect of different impurities on plasma detachment in linear plasma machine Magnum-PSI, *Phys. Plasmas* 26 (2019) 102502
36. M.J. Püschel, D.R. Hatch, D.R. Ernst, W. Guttenfelder, P.W. Terry, J. Citrin, J.W. Connor, On microinstabilities and turbulence in steep-gradient regions of fusion devices, *Plasma Phys. Control. Fusion* 61 (2019) 034002
37. P. Rindt, T.W. Morgan, G.G. van Eden, M.A. Jaworski, N.J. Lopes Cardozo, Power handling and vapor shielding of pre-filled lithium divertor targets in Magnum-PSI, *Nucl. Fusion* 59 (2019) 056003
38. P. Rindt, J. Mata Gonzalez, P. Hoogerhuis, P. van den Bosch, M. van Maris, D. Terentyev, C. Yin, M. Wirtz, N.J. Lopes Cardozo, T.W. Morgan et al., Using 3D-printed tungsten to optimize liquid metal divertor targets for flow and thermal stresses, *Nucl. Fusion* 59 (2019) 054001
39. G. Sias, B. Cannas, A. Fanni, A. Murari, A. Pau, ASDEX Upgrade team, EUROfusion MST1 Team, JET Contributors, A locked mode indicator for disruption prediction on JET and ASDEX upgrade, *Fusion Eng. Des.* 138 (2019) 254-266
40. P. Siren, J. Varje, H. Weisen, L. Giacomelli, A. Ho, M. Nocente, JET Contributors, Improvements in physics models of AFSI-ASCOT-based synthetic neutron diagnostics at JET, *Fusion Eng. Des.* 141 (2019) 1587-1590
41. C. Smiet, H.J. de Blank, T.A. de Jong, D.N.L. Kok, D. Bouwmeester, Resistive evolution of toroidal field distributions and their relation to magnetic clouds, *J. Plasma Phys.* 85 (2019) 905850107
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44. L. Tanure, A. Bakaeva, A. Dubinko, D. Terentyev, K. Verbeken, *Effect of annealing on microstructure, texture and hardness of ITER-specification tungsten analyzed by EBSD, vickers micro-hardness and nano-indentation techniques*, *J. Nucl. Mater.* 524 (2019) 191-199
45. D. Terentyev, L. Tanure, A. Bakaeva, A. Dubinko, V. Nikolic, J. Riesch, K. Verbeken, S. Lebediev, E.E. Zhurkin, *Micromechanical and microstructural properties of tungsten fibers in the as-produced and annealed state: Assessment of the potassium doping effect*, *Int. J. Refract. Met. H.* 81 (2019) 253-271
46. D. Terentyev, W. van Renterghem, L. Tanure, A. Dubinko, J. Riesch, S. Lebediev, T. Khvan, K. Verbeken, J.W. Coenen, E.E. Zhurkin, *Correlation of microstructural and mechanical properties of K-doped tungsten fibers used as reinforcement of tungsten matrix for high temperature applications*, *Int. J. Refract. Met. H.* 79 (2019) 204-216
47. E. Trier, E. Wolfrum, M. Willensdorfer, Q. Yu, M. Hoelzl, F. Orain, F. Ryter, C. Angioni, M. Bernert, B. Vanovac et al., *ELM-induced cold pulse propagation in ASDEX Upgrade*, *Plasma Phys. Control. Fusion* 61 (2019) 045003
48. M. Valovic, Y. Baranov, A. Boboc, J. Buchanan, J. Citrin, E. Delabie, L. Frassinetti, J. Fontdecaba, L. Garzotti, C. Giroud et al., *Control of the hydrogen:deuterium isotope mixture using pellets in JET*, *Nucl. Fusion* 59 (2019) 106047
49. K. Verhaegh, B. Lipschultz, B.P. Duval, O. Février, A. Fil, C. Theiler, M. Wensing, C. Bowman, D.S. Gahle, W.A.J. Vijvers et al., *An improved understanding of the roles of atomic processes and power balance in divertor target ion current loss during detachment*, *Nucl. Fusion* 59 (2019) 126038
50. L. Vialetto, S. Longo, P. Diomede, *Benchmark calculations for electron velocity distribution function obtained with Monte Carlo Flux simulations*, *Plasma Sources Sci. Technol.* 28 (2019) 115015
51. M. Wensing, B.P. Duval, O. Fevrier, A. Fil, D. Galassi, E. Havlickova, A. Perek, H. Reimerdes, C. Theiler, K. Verhaegh et al., *SOLPS-ITER simulations of the TCV divertor upgrade*, *Plasma Phys. Control. Fusion* 61 (2019) 085029
52. G.G. Whelan, M.J. Püschel, P.W. Terry, J. Citrin, I.J. McKinney, W. Guttenfelder, H. Doerk, *Saturation and nonlinear electromagnetic stabilization of ITG turbulence*, *Phys. Plasmas* 26 (2019) 082302
53. M. Yoshikawa, J. Kohagura, Y. Shima, H. Nakanishi, T. Mouri, S. Suto, K. Nojiri, A. Terakado, N. Ezumi, H.J. van der Meiden et al., *First electron temperature and density measurements of D-module plasma in GAMMA 10/PDX using Thomson scattering and microwave interferometer systems*, *J. Instrum.* 14 (2019) P06033
54. M. Yoshikawa, H.J. van der Meiden, R. Al, J. Vernimmen, J. Kohagura, Y. Shima, K. Sakamoto, Y. Nakashima, *Low frequency fluctuation study using a microwave interferometer and H α line emission measurement systems in the Pilot-PSI device*, *AIP Adv.* 9 (2019) 085225

Publications in other journals and conference proceedings: 10

1. R. Chandra, H.J. de Blank, P. Diomede, E. Westerhof, *Sensitivity analysis of collisional processes in a detached plasma in Magnum-PSI with B2.5-Eunomia*, *46th EPS Conference on Plasma Physics* (2019) P2.1049
2. A. Das, S. Weiland, M. van Berkel, *Frequency domain estimation of spatially varying parameters in heat and mass transport*, *Proceedings of the American Control Conference 2019* (2019) 8814465
3. A.J.H. Donné, *Roadmap towards fusion electricity*, *Journal of Fusion Energy* 38 (2019) 503-505
4. H. Goedbloed, R. Keppens, *The Spectral Web of the Super-Alfvénic Rotational Instability in accretion disks: An alternative to the MRI paradigm!*, *46th EPS Conference on Plasma Physics* (2019) 04.401
5. A. Ho, J. Citrin, C. Bourdelle, K.L. van de Plassche, H. Weisen, *JET Contributors, JET 1D tokamak plasma profile database construction for training neuralnetwork surrogate transport models*, *46th EPS Conference on Plasma Physics* (2019) P5.1074
6. G.M.D. Hogeweij, F. Felici, M. Kong, O. Sauter, *Magnum PSI team, EUROfusion MST1 Team, Separating the effects of heating and current drive on NTM evolution in TCV*, *SPC-EPFL-Lausanne Report* (2019) 2019/09

7. M. Marin, J. Citrin, A. Ho, C. Bourdelle, Y. Camenen, F.J. Casson, L. Garzotti, F. Koechl, M. Maslov, M. Valovic et al., *Integrated modelling of multiple isotope pellet cycles at JET*, 46th EPS Conference on Plasma Physics (2019) P2.1076
8. K.L. van de Plassche, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, V.I. Dagnelie, F. Felici, A. Ho, *JET Contributors, Near-realtime tokamak scenario simulation with neural networks*, 46th EPS Conference on Plasma Physics (2019) P1.1089
9. T. Ravensbergen, M. van Berkel, *A control-oriented approach to real-time tokamak divertor plasma detachment control*, *Book of Abstracts 38th Benelux Meeting on Systems and Control* (2019) 66
10. L. Tanure, D. Terentyev, J. Riesch, K. Verbeke, *Evolution of microstructure, texture and grain boundary character distribution of potassium doped tungsten fibers annealed at variable temperatures*, *Journal of Physics: Conference Series* 1270 (2019) 012038

Book: 1

1. J.P. Goedbloed, R. Keppens, S. Poedts, *Magnetohydrodynamics of Laboratory and Astrophysical Plasmas*, Cambridge University Press, 9781316403679, 2019, p. 974

Invited lectures at conferences and meetings: 45

1. ASML, 2019/10/30, Eindhoven, Netherlands, M.R. de Baar, *Lecture course on Plasma control*
2. 37th Meeting of the ITPA Diagnostics Topical Group, 2019/10/07 - 2019/10/10, Cadarache, France, M.R. de Baar, *Realtime sub working group (SWG) report*
3. PhDiaFusion Summer School, 2019/06/03 - 2019/06/07, Niepolomice, Poland, M.R. de Baar, *NTM control - mode frequency and phase*
4. 3rd IAEA Technical Meeting on Fusion Data Processing, Validation and Analysis 2019, 2019/05/27 - 2019/05/31, Vienna, Austria, M.R. de Baar, F. Felici, M. van Berkel, T. Ravensbergen, T. Blanken, *Synthetic Diagnostics And State-Observation For Real Time Control Of Nuclear Fusion Plasmas*
5. GWADW2019 - Gravitational-Wave Advanced Detector Workshop - From Advanced Interferometers to Third Generation Observatories, 2019/05/19 - 2019/05/25, Elba, Italia, M.R. de Baar, *Application of modern control techniques outside the GW community*
6. ITPA Working Group on Real Time Diagnostics, 2019/04/09, Canberra, Australia, M.R. de Baar, *Report on Real Time Diagnostics*
7. Roundtable event ITER and Fusion for Energy meet Dutch Industry, 2019/03/13, Eindhoven, Netherlands, M.R. de Baar, *Highlights Dutch Fusion Programme*
8. Seminar at Wendelstein 7-X, 2019/02/22, Greifswald, Germany, M.R. de Baar, M. van Berkel, T.C. Blanken, F. Felici, B. Maljaars, T. Ravensbergen, *System identification and model based plasma control*
9. 24th MHD Stability Control Workshop, 2019/10/28 - 2019/10/30, New York, NY, USA, M. van Berkel, *System identification and real-time control of, the CIII emission front using MANTIS in TCv*
10. 37th Meeting of the ITPA Diagnostics Topical Group, 2019/10/07 - 2019/10/10, Cadarache, France, M. van Berkel, G. Oosterwegel, R.J.R. van Kampen, G. Vandersteen, H.J. Zwart, M.R. de Baar, *Simultaneous estimation of transport and power deposition profiles using perturbative experiments with a view on (Bayesian) statistics*
11. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, M. van Berkel, G. Vandersteen, H.J. Zwart, G. Oosterwegel, G.M.D. Hogeweij, E. Westerhof, J. Citrin, *Simultaneous estimation of transport and power deposition profiles and its consequences for transport*, I2.104

12. *34th International Conference on Phenomena in Ionized Gases (ICPIG) / 10th International Conference on Reactive Plasmas (ICRP), 2019/07/14 - 2019/07/19, Sapporo, Japan, A. Bourdon, P. Viegas, Z. Bonaventura, Modeling of low-temperature plasma jets at atmospheric pressure, TL-27*
13. *Digital Twin Conference 2019, 2019/10/31, Eindhoven, Netherlands, J. Citrin, C. Bourdelle, Y. Camenen, A. Ho, K.L. van de Plassche, F. Felici, Fusion plasma turbulence simulation with neural network surrogate models*
14. *European Numerical Mathematics and Advanced Applications Conference EnuMath 2019, 2019/09/30 - 2019/10/04, Egmond aan Zee, Netherlands, J. Citrin, C. Bourdelle, Y. Camenen, A. Ho, K.L. van de Plassche, F. Felici, Fusion plasma turbulence simulation with neural network surrogate models*
15. *21st International Summer School on Vacuum, Electron and Ion Technologies VEIT, 2019/09/23 - 2019/09/27, Sozopol, Bulgaria, J. Citrin, C. Bourdelle, F.J. Casson, A. Ho, K.L. van de Plassche, Y. Camenen, F. Felici, Accelerated plasma turbulence modelling with neural networks*
16. *24th Joint US-EU Transport Task Force Meeting (TTF 2019), 2019/03/18 - 2019/03/21, Austin, TX, USA, J. Citrin, C. Bourdelle, F.J. Casson, Y. Camenen, F. Felici, X. Garbet, A. Ho, F. Koechl, O. Linder, M. Marin et al., Multi-channel validation of a quasilinear gyrokinetic transport model in flux-driven integrated modelling*
17. *International Conference, Statistical thermodynamics and chemical kinetics: far away from equilibrium, 2019/06/25/ 2019/06/26, Rome, Italy, P. Diomede, P. Viegas, M.C.M. van de Sanden, S. Longo, Fokker-Planck equation in chemical kinetics*
18. *Symposium Energizing the Future 60th anniversary DIFFER Dutch Institute for Fundamental Energy Research, 2019/12/13, Eindhoven, Netherlands, A.J.H. Donné, Challenges for Nuclear Fusion in the upcoming decades*
19. *Seminar University of Malta, 2019/11/29, Msida, Malta, A.J.H. Donné, Overview of the EUROfusion programme*
20. *8th Meeting of the International Advisory Committee EAST tokamak, 2019/10/13 - 2019/10/15, Hefei, China, A.J.H. Donné, R. Kamendje, X. Litaudon, Overview of and plans for the European involvement in the EAST tokamak*
21. *14th International Symposium on Fusion Nuclear Technology ISFNT-14, 2019/09/22 - 2019/09/27, Budapest, Hungary, A.J.H. Donné, The European Fusion Roadmap: Overview and recent progress, KN-2*
22. *Plasma 2019 International Conference on Research and Applications of Plasmas, 2019/07/15 - 2019/07/19, Opole, Poland, A.J.H. Donné, Progress in European Fusion Research*
23. *EPS Town meeting on preparation EUROfusion for Horizon Europe, 2019/07/09, Milan, Italy, A.J.H. Donné, Overview of the revised Fusion Roadmap*
24. *Special session Fusion for Energy (F4E) Governing Board, 2019/07/08, Cadarache, France, A.J.H. Donné, G. Federici, G. Giruzzi, I. Ibarra, Involvement of EUROfusion in the Broader Approach projects*
25. *Seminar ITER China, 2019/06/06, Beijing, China, A.J.H. Donné, Challenges on the path towards fusion electricity*
26. *Seminar Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP), 2019/06/05, Hefei, China, A.J.H. Donné, Challenges on the path towards fusion electricity*
27. *Seminar Chinese South Western Institute of Physics, 2019/06/03, Chengdu, China, A.J.H. Donné, Challenges on the path towards fusion electricity*
28. *9th International Conference on Frontiers of Plasma Physics and Technology (FPPT-9), 2019/04/08 - 2019/04/12, Negombo, Sri Lanka, A.J.H. Donné, Challenges on the path towards fusion electricity*
29. *ITER Business Forum 2019, 2019/03/26 - 2019/03/28, Antibes, France, A.J.H. Donné, Perspectives and opportunities for the European DEMO*
30. *ITER-EUROfusion day on ITER-NBTF and ELISE activities, and support from EU Research Units within EUROfusion Programme, 2019/03/25 - 2019/03/26, Padova, Italy, A.J.H. Donné, The Neutral Beam Test Facility including EUROfusion involvement*
31. *KSTAR Conference 2019, 2019/02/20 - 2019/02/22, Seoul, South Korea, A.J.H. Donné, European Roadmap towards fusion electricity*
32. *Fusion Power Co-ordinating Committee (FPCC) Strategic Discussion, 2019/02/14, Paris, France, A.J.H. Donné, G. Pintsuk, S. Brezinsek, Strategies, recent developments and remaining challenges in materials research for fusion*

33. XXIV Italian Vacuum Association Conference 2019, 2019/05/07 - 2019/05/10, Gairdini Naxos, Sicily, Italy, H.J.N. van Eck, S. Alonso van der Westen, S. Brons, I.G.J. Classen, H.J. van der Meiden, T.W. Morgan, M.J. van de Pol, J. Scholten, J.W.M. Vernimmen, E.G.P. Vos et al., *Contributions of the linear plasma facility Magnum-PSI to fusion research*
34. 28th International Toki Conference on Plasma and Fusion Research, 2019/11/05 - 2019/11/08, Toki-city, Japan, N. Ezumi, R. Perillo, T. Iijima, K. Nojiri, A. Terakado, M. Sakamoto, Y. Nakashima, M. Hirata, J. Kohagura, M. Yoshikawa et al., *Plasma detachment in divertor simulation/experimental module of GAMMA 10/PDX: role of molecule gases*, I4-01
35. 3rd IAEA Technical Meeting on Fusion Data Processing, Validation and Analysis 2019, 2019/05/27 - 2019/05/31, Vienna, Austria, A. Ho, J. Citrin, F. Auriemma, C. Bourdelle, F.J. Casson, H.T. Kim, P. Manas, K.L. van de Plassche, H. Wiesen, *JET Contributors, Application of Gaussian process regression techniques to experimental plasma profile fitting and model validation*
36. 2nd International Conference on Data Driven Plasma Science, 2019/05/13 - 2019/05/18, Marseille, France, A. Ho, J. Citrin, F. Auriemma, C. Bourdelle, F.J. Casson, H.T. Kim, P. Manas, G. Szepesi, H. Weisen, *JET Contributors, Application of Gaussian process regression techniques to experimental plasma profile fitting and model validation*
37. 6th IAEA DEMO Program Workshop (DPWS-6), 2019/10/01 - 2019/10/04, Moscow, Russia, A. Litnovsky, F. Klein, J. Schmitz, J.W. Coenen, Y. Mao, A. Terra, G. Sergienko, G. Pintsuk, C. Linsmeier, T.W. Morgan et al., *Critical Issues of W-based PFMs for DEMO*
38. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, S. Longo, P. Viegas, M.C.M. van de Sanden, P. Diomede, *A diffusion approach to vibrational kinetics of molecules in plasma*, I4.301
39. PhDiaFusion Summer School, 2019/06/03 - 2019/06/07, Niepolomice, Poland, H.J. van der Meiden, *Incoherent and collective Thomson scattering for the determination of electron and ion properties in low-temperature plasma*
40. 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, T.W. Morgan, M. Balden, S. Elgeti, T. Schwartz-Selinger, S. Brezinsek, G. De Temmerman, *ITER monoblock performance under lifetime loading conditions in Magnum-PSI*, I3
41. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, T. Morgan, *Bubbles and clouds: what happens when plasmas interact with liquids?*, FT6.1
42. 2nd International Conference on Data Driven Plasma Science, 2019/05/13 - 2019/05/18, Marseille, France, K.L. van de Plassche, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, V.I. Dagnelie, F. Felici, A. Ho, *JET Contributors, Surrogate modelling using feed forward neural networks for turbulent transport in fusion plasmas*
43. 37th Meeting of the ITPA Diagnostics Topical Group, 2019/10/07 - 2019/10/10, Cadarache, France, T. Ravensbergen, M. van Berkel, A. Perek, C. Galperti, R.J.R. van Kampen, J.T. Lammers, K. Verhaegh, O. Fevrier, M. Komm, S. Henderson et al., *Detachment control with multi-imaging spectroscopy*
44. Seminar N-PRIME group Instituto de Plasmas e Fusao Nuclear (IPFN) / IST-UL, 2019/03/20 - 2019/06/26, Lisboa, Portugal, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, *Modelling the vibrational kinetics of CO₂ through the Fokker-Planck approach*
45. National eScience Symposium 2019: Digital Challenges in Open Science, 2019/11/21, Amsterdam, Netherlands, E. Westerhof, *Fusion science in the ITER era: data and modelling challenges*

Other oral and poster presentations at (international) conferences and meetings: 77

1. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, G.R.A. Akkermans, R. Perillo, R. Chandra, I.G.J. Classen, H.J. van der Meiden, J.W.M. Vernimmen, M.R. de Baar, *Investigating the role of hydrogen molecular effects on detachment using Magnum-PSI*, Poster, P2.1043
2. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, G.R.A. Akkermans, R. Perillo, R. Chandra, I.G.J. Classen, M.R. de Baar, *Investigating hydrogen plasma-chemical processes using Optical Emission Spectroscopy in detached Magnum-PSI scenarios*, Poster, A1

3. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, G. Akkermans, R. Perillo, I. Classen, W. Vijvers, Investigating hydrogen plasma-chemical processes in detached Magnum-PSI scenarios, Poster, P8.009*
4. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, M. Balden, S. Elgeti, T.W. Morgan, S. Brezinsek, G. De Temmerman, Scanning electron microscopy analyses of the ITER plasma-facing unit mockup exposed to extreme ion fluence in Magnum-PSI, Poster, PA045*
5. *3rd European Conference on Plasma Diagnostics 2019, 2019/05/06 - 2019/05/09, Lisbon, Portugal, J. van den Berg, H.J. van der Meiden, J.W.M. Vernimmen, I.G.J. Classen, Near-wall plasma acceleration measurements with the incoherent and coherent Thomson scattering diagnostic at Magnum-PSI, Poster, P2.47*
6. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, J. van den Berg, H.J. van der Meiden, J.W.M. Vernimmen, I.G.J. Classen, Near-wall plasma parameter measurements with the incoherent Thomson scattering diagnostic at Magnum-PSI, Poster, A4*
7. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, J. van den Berg, J. Vernimmen, H. van der Meiden, I. Classen, Coherent & incoherent Thomson scattering with the aim of direct observation of the plasma presheath, Poster, P8.010*
8. *58th IEEE Conference on Decision and Control (CDC 2019), 2019/12/11 - 2019/12/13, Nice, France, M. van Berkel, G. Oosterwegel, M. Anthonissen, H. Zwart, G. Vandersteen, A novel frequency domain maximum likelihood approach for estimating transport coefficients in cylindrical geometry for nuclear fusion devices, Oral, ThA12.2*
9. *28th International Toki Conference on Plasma and Fusion Research, 2019/11/05 - 2019/11/08, Toki-city, Japan, M. van Berkel, T. Ravensbergen, A. Perek, R.J.R. van Kampen, J.T. Lammers, B. Duval, O. Fevrier, C. Galperti, C. Theiler, B. Linehan et al., System Identification and Real-time Control of the CIII Emission Front using MANTIS in TCV, Oral, 04-03*
10. *61st Annual Meeting of the APS Division of Plasma Physics, 2019/10/21 - 2019/10/25, Fort Lauderdale, FL, USA, M. van Berkel, G. Vandersteen, H. Zwart, E. Westerhof, G.M.D. Hogeweij, J. Citrin, D. Peumans, M.R. de Baar, Mathematical equivalence of non-local transport models and broadened deposition profiles, Poster, UP10.09*
11. *61st Annual Meeting of the APS Division of Plasma Physics, 2019/10/21 - 2019/10/25, Fort Lauderdale, FL, USA, M. van Berkel, T. Ravensbergen, A. Perek, C. Galperti, R.J.R. van Kampen, J.T. Lammers, O. Fevrier, S. Henderson, M. Komm, D. Brida et al., Real-time feedback control of the radiation front location in the TCV tokamak, Poster, PO6.04*
12. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, M. van Berkel, T. Kobayashi, Estimating the heat flux and its components from electron temperature measurements, Oral, PT6.7*
13. *46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, H. de Blank, Ion orbit losses in a radially resolved model of the H-mode barrier, Poster, P2.1020*
14. *46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, R. Chandra, H.J. de Blank, P. Diomedede, E. Westerhof, Sensitivity analysis of collisional processes in a detached plasma in Magnum-PSI with B2.5-Eunomia, Poster, P2.1049*
15. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, R. Chandra, M. Machielsen, L. Balbinot, H.J. de Blank, Modelling of liquid lithium target experiments in Magnum-PSI using B2.5-Eunomia: development and first results, Poster, PA030*
16. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, R. Chandra, H.J. de Blank, P. Diomedede, E. Westerhof, B2.5-EUNOMIA modelling of detached plasma experiments in Magnum-PSI, Poster, P8.007*
17. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, W.Q. Chen, X.Z. Xiao, K.L. Li, T.W. Morgan, W. Liu, Y.L. Chiu, Irradiation hardening induced by blistering in tungsten due to low energy high flux hydrogen plasma exposure, Poster, PA071*
18. *7th International Workshop on Plasma Material Interaction Facilities for Fusion PMIF 2019, 2019/10/22 - 2019/10/25, La Jolla, CA, USA, H.J.N. van Eck, Magnum PSI team, High-fluence and high-flux performance characteristics of the superconducting Magnum-PSI linear plasma facility, Oral*
19. *46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, H. Goedbloed, R. Keppens, The Spectral Web of the super-Alfvénic rotational instability in accretion disks: an alternative to the MRI paradigm!, Oral, 04.401*

20. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, A. Ho, J. Citrin, C. Bourdelle, F.J. Casson, K.L. van de Plassche, H. Weisen, JET Contributors, JET 1D tokamak plasma profile database construction for training neuralnetwork surrogate transport models, Poster, P5.1074
21. 24th Joint US-EU Transport Task Force Meeting, 2019/03/18 - 2019/03/21, Austin, TX, USA, A. Ho, J. Citrin, F.J. Casson, F. Auriemma, C. Bourdelle, H.T. Kim, P. Manas, G. Szepesi, H. Weisen, JET Contributors, JET 1D profile database construction using Gaussian process regression techniques for training neural network surrogate transport models, Poster, 2-21
22. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, A. Ho, K. van de Plassche, J. Citrin, Accelerating tokamak plasma turbulence predictions through the use of neural networks, Poster, P8.013
23. 22nd Workshop on the Exploration of Low-Temperature Plasma Physics (WELTPP-22), 2019/11/28 - 2019/11/20, Kerkrade, The Netherlands, M. Hofmans, P. Viegas, O. van Rooij, B. Klarenaar, O. Guaitella, A. Bourdon, A. Sobota, Characterization of a kHz atmospheric pressure plasma jet: Comparison of discharge propagation parameters in experiments and simulations, Oral, 011
24. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, P. Horn, J. Citrin, Inclusion of physics constraints in neural network surrogate models for fusion simulation, Poster, P33
25. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, S.Q. Korving, T.W. Morgan, S. Nijdam, P. Rindt, Measuring Radiative Power of Liquid Metal Vapour Shielding in Magnum-PSI, Oral, 08
26. Symposium Energizing the Future 60th anniversary DIFFER Dutch Institute for Fundamental Energy Research, 2019/12/13, Eindhoven, Netherlands, I. Krebs, S.C. Jardin, S. Günter, K. Lackner, M. Hoelzl, E. Strumberger, N.M. Ferraro, Magnetic Flux Pumping in Hybrid Tokamak Discharges Studied by Means of 3D Nonlinear MHD Simulations, Poster
27. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, I. Krebs, S.C. Jardin, S. Günter, K. Lackner, M. Hoelzl, E. Strumberger, N.M. Ferraro, Magnetic Flux Pumping in Hybrid Tokamak Discharges Studied by Means of 3D Nonlinear MHD Simulations, Oral, 09
28. 61st Annual Meeting of the APS Division of Plasma Physics, 2019/10/21 - 2019/10/25, Fort Lauderdale, FL, USA, J. Leland, S. Elmore, A. Kirk, H.J. van der Meiden, J. Bradley, Angular dependence measurements of Magnum-PSI plasmas using MAST-U flush mounted Langmuir probes, Poster, GP10.24
29. 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, Y. Li, S. Ryelandt, A. Favache, W. van Renterghem, M. van Maris, D. Terentyev, M. Wirtz, J.P.M. Hoefnagels, J.A.W. van Dommelen, G. De Temmerman et al., Hydrogen-induced pinning of dislocations in tungsten probed by spherical nanoindentation, Poster, PA056
30. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, Y. Li, T. Morgan, et al., Fracture behavior of tungsten composites exposed to combined steady-state/transient hydrogen plasma, Poster, P8.002
31. 14th International Symposium on Fusion Nuclear Technology ISFNT-14, 2019/09/22 - 2019/09/27, Budapest, Hungary, A. Litnovsky, J. Schmitz, F. Klein, K. De Lannoye, S. Weckauf, A. Kreter, M. Rasinski, J.W. Coenen, C. Linsmeier, T.W. Morgan et al., Smart tungsten-based alloys for a first wall of DEMO, Poster, P1-025
32. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, M. Marin, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, L. Garzotti, A. Ho, F. Koechl, M. Maslov, M. Valovic et al., Integrated core transport modelling of multiple isotope pellet cycle at JET, Poster, P2.1076
33. 24th Joint US-EU Transport Task Force Meeting (TTF 2019), 2019/03/18 - 2019/03/21, Austin, TX, USA, M. Marin, J. Citrin, A. Ho, C. Bourdelle, Y. Camenen, F.J. Casson, F. Koechl, M. Maslov, JET Contributors, Isotope-mixing at JET: experiments and modelling, Poster, 2-18
34. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, M. Marin, J. Citrin, A. Ho, Isotope-mixing at JET: experiments and modelling, Poster, P8.012
35. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, M. Maslov, J. Citrin, P. Jacquet, Y. Kazakov, D.L. Keeling, D.B. King, E. Lerche, M. Marin, J. Ongena, D. van Eester et al., High fusion power in tritium rich scenario in JET, Oral, 05.104

36. *Joint Annual Meeting of WP JET2 and WP PFC (Plasma Facing Components)*, 2019/11/18 - 2019/11/21, Bratislava, Slovakia, H.J. van der Meiden, SP 7: Plasma Diagnostics for PFC, Oral
37. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019*, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, J. Miskovicova, M. Angus, H.J. van der Meiden, P. Veis, Selection of molybdenum lines by qualitative analysis of molybdenum-zircon-titanium alloy by CF-LIBS for future fusion use, Poster, PB061
38. *Physics Veldhoven 2019*, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, C. Onwudinanti, I. Tranca, T. Morgan, S. Tao, Tin, the enabler hydrogen diffusion into ruthenium, Poster, P5.022
39. *6th International Symposium on Liquid Metals Applications for Fusion 2019*, 2019/09/30 - 2019/10/03, Urbana-Champaign, IL, USA, W. Ou, P. Rindt, N.J. Lopes Cardozo, T.W. Morgan, Influence of temperature on deuterium retention in lithium targets exposed to Magnum-PSI, Oral, O-TU-S4
40. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019*, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, W. Ou, T.W. Morgan, P. Rindt, J.W.M. Vernimmen, R.S. Al, S. Brons, Deuterium retention in liquid metals (Sn, Li and LiSn alloys) exposed to fusion-relevant flux plasmas, Poster, PB038
41. *31st Symposium Plasma Physics and Radiation Technology*, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, W. Ou, T.W. Morgan, N.J. Lopes Cardozo, J.W.M. Vernimmen, P. Rindt, R.S. Al, S. Brons, Deuterium retention in tin samples exposed to fusion-relevant flux plasmas, Oral, O13
42. *46th EPS Conference on Plasma Physics*, 2019/07/08 - 2019/07/12, Milan, Italy, A. Perek, M.R. de Baar, M. van Berkel, I.G.J. Classen, B.P. Duval, J.R. Harrison, B. Linehan, T. Ravensbergen, K. Verhaegh, W.A.J. Vijvers et al., Quantitative analysis of high n Balmer lines using multispectral imaging in detached divertor plasmas at TCV, Poster, P4.1017
43. *3rd European Conference on Plasma Diagnostics 2019*, 2019/05/06 - 2019/05/09, Lisbon, Portugal, A. Perek, W.A.J. Vijvers, I.G.J. Classen, T. Ravensbergen, M.R. de Baar, B.P. Duval, Y. Andrebe, C. Galperti, B. Linehan, K. Verhaegh, Multispectral Advanced Narrowband Tokamak Imaging System (MANTIS), Poster, P3.23
44. *31st Symposium Plasma Physics and Radiation Technology*, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, A. Perek, W.A.J. Vijvers, Y. Andrebe, M.R. de Baar, I.G.J. Classen, B.P. Duval, C. Galperti, B. Linehan, T. Ravensbergen, K. Verhaegh, Multispectral Advanced Narrowband Tokamak Imaging System (MANTIS), Poster, B10
45. *31st Symposium Plasma Physics and Radiation Technology*, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, R. Perillo, G.R.A. Akkermans, I.G.J. Classen, W.A.J. Vijvers, R. Chandra, K. Jesko, J.W.M. Vernimmen, M.R. de Baar, Magnum PSI team, Enhanced recombination of a hydrogen plasma induced by nitrogen seeding in linear plasma device Magnum-PSI, Poster, B11
46. *Physics Veldhoven 2019*, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, R. Perillo, G. Akkermans, R. Chandra, I. Classen, M. de Baar, New molecular-assisted recombination in the presence of nitrogen: modelling and experiments, Oral, PT6.6
47. *46th EPS Conference on Plasma Physics*, 2019/07/08 - 2019/07/12, Milan, Italy, K.L. van de Plassche, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, V.I. Dagnelie, F. Felici, A. Ho, JET Contributors, Near-realtime tokamak scenario simulation with neural networks, Poster, P1.1089
48. *3rd IAEA Technical Meeting on Fusion Data Processing, Validation and Analysis 2019*, 2019/05/27 - 2019/05/31, Vienna, Austria, K.L. van de Plassche, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, V.I. Dagnelie, F. Felici, A. Ho, JET Contributors, Accelerated Integrated Modelling with a Neural Network Surrogate Model for Turbulent Transport, Oral
49. *24th Joint US-EU Transport Task Force Meeting (TTF 2019)*, 2019/03/18 - 2019/03/21, Austin, TX, USA, K.L. van de Plassche, J. Citrin, C. Bourdelle, Y. Camenen, F.J. Casson, V.I. Dagnelie, F. Felici, A. Ho, JET Contributors, Using feed-forward neural networks in real-time capable turbulent transport modelling, Poster, 1-17
50. *Physics Veldhoven 2019*, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, K. van de Plassche, J. Citrin, C. Bourdelle, F. Felici, A. Ho, Surrogate modelling using feed forward neural networks for turbulent transport in fusion plasmas, Poster, P8.006
51. *7th International Workshop on Plasma Material Interaction Facilities for Fusion PMIF 2019*, 2019/10/22 - 2019/10/25, La Jolla, CA, USA, M.J. van de Pol, DIFFER UPP team, Upgraded Pilot PSI: a high flux linear plasma generator for operando ion beam material studies, Oral

52. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, T. Ravensbergen, M. van Berkel, A. Perek, R.J.R. van Kampen, J.T. Lammers, B.P. Duval, O. Fevrier, C. Galperti, C. Theiler, H. Reimerdes et al., *Real-time control of the CIII emission front using MANTIS*, Oral, O3.305
53. 38th Benelux Meeting on Systems and Control 2019, 2019/03/19 - 2019/03/21, Lommel, Belgium, T. Ravensbergen, M. van Berkel, *A control-oriented approach to real-time tokamak divertor plasma detachment control*, Oral, WeP01-6
54. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, T. Ravensbergen, M. van Berkel, I. Classen, *A control-oriented approach to real-time tokamak divertor plasma detachment control*, Poster, P8.008
55. 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, A. Razdobarin, N. Babinov, I. Bukreev, A. Chernakov, A. Dmitriev, D. Kirilenko, E. Mukhin, T.W. Morgan, M.A. van den Berg, S. Brons et al., *Transport of Eroded Material under Transient Plasma Surface Interaction in Fusion Devices*, Poster, PB004
56. 6th IAEA DEMO Program Workshop (DPWS-6), 2019/10/01 - 2019/10/04, Moscow, Russia, P. Rindt, T.W. Morgan, *Conceptual Design of a Liquid Metal Divertor for the European DEMO*, Poster, P8
57. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, P. Rodriguez-Fernandez, N.T. Howard, A.E. White, A.J. Creely, F. Sciortino, C. Angioni, J. Citrin, E. Fable, T. Luda, X. Yuan, *Core Transport Studies in Tokamak Plasmas via Surrogate-based Optimization Techniques*, Poster, P2.1077
58. 2nd International Conference on Data Driven Plasma Science, 2019/05/13 - 2019/05/18, Marseille, France, P. Rodriguez-Fernandez, A.E. White, A.J. Creely, N.T. Howard, F. Sciortino, C. Angioni, J. Citrin, E. Fable, M.J. Greenwald, T. Luda et al., *Surrogate-Based Optimization Techniques for the Validation of Plasma Transport Models*, Oral
59. 23th International Low Temperature Plasma School, 2019/10/05 - 2019/11/10, Bad Honnef, Germany, D.M.S. Ronden, S. Alonso van der Westen, W. Arnold Bik, R.S. Al, M.Y. Barel, H.J.N. van Eck, K.J. Kaspers, M.J. van de Pol, J. Scholten, R.H.M. Timmer et al., *Challenges in the design of Upgraded Pilot-PSI*, Poster
60. 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, L. Tanure, D. Terentyev, A. Dubinko, V. Makhelai, K. Verbeke, *EBSD analysis and hardness evaluation of ITER specification tungsten exposed at QSPA Kh-50*, Poster, PB077
61. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, M. Valisa, L. Carraro, F.J. Casson, J. Citrin, L. Frassinetti, F. Koechl, M. Romanelli, M.E. Puiatti, I. Coffey, E. Delabie et al., *The role of the edge barrier in the penetration of impurities in the JET ELMy H-mode plasmas*, Poster, P5.1083
62. 46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, K. Verhaegh, B. Lipschultz, B.P. Duval, A. Fil, O. Fevrier, D.S. Gahle, J. Harrison, D. Moulton, O. Myatra, A. Perek et al., *Investigating the influence of molecules on power/particle/momentum balance in the detached TCV divertor*, Poster, P2.1038
63. 23th International Low Temperature Plasma School, 2019/11/06 - 2019/11/10, Bad Honnef, Germany, J.W.M. Vernimmen, J. van den Berg, H.J. van der Meiden, I.G.J. Classen, H.J.N. van Eck, *Magnum PSI team, Near surface Thomson scattering measurements during high flux plasma exposure in Magnum-PSI*, Poster
64. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, L. Vialetto, S. Longo, P. Diomede, *Monte Carlo Flux simulations of electron velocity distribution function in CO₂*, Poster, P15
65. 34th International Conference on Phenomena in Ionized Gases (ICPIG) / 10th International Conference on Reactive Plasmas (ICRP), 2019/07/14 - 2019/07/19, Sapporo, Japan, L. Vialetto, S. Longo, P. Diomede, *Monte Carlo Flux simulations of electrons for plasma modelling*, Oral, OR16PM-D01
66. ISPC 2019, 24th International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, L. Vialetto, S. Longo, P. Diomede, *Monte Carlo Flux simulations of electrons for plasma modelling*, Poster and Poster Pitch, P1-24
67. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, L. Vialetto, S. Longo, P. Diomede, *Monte Carlo Flux Simulations of Electrons for Plasma Modelling*, Oral, O2
68. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, L. Vialetto, S. Longo, P. Diomede, *Monte Carlo flux simulations of plasma electron kinetics*, Poster, P8.004

69. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Self-consistent Fokker-Planck approach to CO₂ vibrational kinetics, Poster, P12*
70. *KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Self-consistent Fokker-Planck approach to vibrational kinetics of CO₂ plasma, Poster, P11*
71. *34th International Conference on Phenomena in Ionized Gases (ICPIG) / 10th International Conference on Reactive Plasmas (ICRP), 2019/07/14 - 2019/07/19, Sapporo, Japan, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Self-consistent Fokker-Planck approach to CO₂ vibrational kinetics, Oral, OR16PMD02*
72. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Self-consistent diffusion approach to CO₂ vibrational kinetics, Oral, O-82*
73. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Self-consistent Fokker-Planck approach to CO₂ vibrational kinetics, Poster, B16*
74. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, S.C. Wang, Plasma-induced deuterium retention in Ru-capped materials, Poster, P8.005*
75. *46th EPS Conference on Plasma Physics, 2019/07/08 - 2019/07/12, Milan, Italy, M. Wensing, H. de Oliveira, C. Dodson, B.P. Duval, O. Fevrier, A. Fil, D. Galassi, L. Martinelli, R. Maurizio, A. Perek et al., Drift effects in SOLPS-ITER simulations for the TCV divertor upgrade, Poster, P5.1043*
76. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, R.H.J. Westerman, A.J. Wolf, E. Westerhof, M.C.M. van de Sanden, Dissociation of a CO₂ gas and chemical equilibrium at high temperature, Poster, B17*
77. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, M. Yoshikawa, J. Kohagura, Y. Shima, H. Nakanishi, T. Mouri, S. Suto, N. Ezumi, M. Sakamoto, Y. Nakashima, H.J. van der Meiden et al., First electron temperature and density measurements of D-module plasma in GAMMA 10/PDX using Thomson scattering and microwave interferometer Systems, Poster, PB034*

Public events and industry contacts: 6

1. *Vereniging voor Weer- en Sterrenkunde Thales, 2019/11/28, Zwolle, Netherlands, M.R. de Baar, Kernfusie, stand van zaken en toekomst*
2. *Seminar Eindhoven University of Technology, 2019/04/25, Eindhoven, Netherlands, M.R. de Baar, Haptics for nuclear fusion reactor maintenance*
3. *Science Café Harderwijk, 2019/02/21, Harderwijk, Netherlands, M.R. de Baar, De zoektocht naar alternatieve energiebronnen*
4. *Triangulum, vereniging voor weer- en sterrenkunde, 2019/02/07, Apeldoorn, Netherlands, M.R. de Baar, Kernfusie, Stand van zaken en Toekomstperspectief*
5. *Big Science for Business (ILO-net en Mikrocentrum), 2019/05/15, Veldhoven, Netherlands, M. van Berkel, Special by DIFFER and NIKHEF: Data-driven modellering van thermische systemen voor Big Science en industrie*
6. *Strategic Area Energy TU/e, 2019/05/24, Eindhoven, Netherlands, Y. Li, 8th Energy Research Meet - Thermal-mechanical modifications of tungsten induced by high fluence plasma*

Media appearances: 6

1. *Heeft de kernfusiereactor de toekomst?*, natuurkunde.nl, 2019/01/24, Interview with M.R. de Baar, T.W. Morgan
2. *Zon op aarde*, Quest, 2019/01/10, Interview with M.R. de Baar
3. *Kernfusie: toekomst in de steigers*, KIJK, 2019/01/01, Interview with M.R. de Baar
4. *Radio interview about the JET programme*, BBC Radio 4 Inside Science, 2019/08/29, Interview with A.J.H. Donné
5. *De grote beloftes van kernfusie*, NRC Handelsblad, 2019/02/23, General coverage
6. *Thomas Morgan van Differ in Eindhoven krijgt Vidi-beurs voor onderzoek kernfusie*, Eindhovens Dagblad, 2019/05/24, Interview with T.W. Morgan

Positions, including editorships: 32

1. M.R. de Baar, Member executive board of ITER-NL consortium (since 2014), 2019
2. M.R. de Baar, Member of the Fusion for Energy (F4E) Governing Board (since 2019), 2019
3. M.R. de Baar, Member of the Advisory Board FONTYS Applied Natural Sciences (since 2018), 2019
4. M.R. de Baar, Chair Realtime Specialists Working Group (RT-SWG) of ITPA framework for ITER (2018-2021), 2019
5. M.R. de Baar, Lecturer Course series at Eindhoven University of Technology (since 2015), 2019
6. M.R. de Baar, Professor at Eindhoven University of Technology (since 2012), 2019
7. M.R. de Baar, Member of WEST Review Panel, Cadarache France 2019, November 14-15, 2019
8. M.R. de Baar, Leader ITER-NL work package 2: ITER Upper port Electron Cyclotron Current Drive launcher (since 2007), 2019
9. M.R. de Baar, Member of Eurofusion KDII Review Panel, Garching, Germany, 2019, October 22-23, 2019
10. H.J. de Blank, Lecturer Course series at Eindhoven University of Technology (since 2015), 2019
11. H.J. de Blank, Member of the Organizing Committee of the Carolus Magnus Summer School on Plasma Physics (since 2014), 2019
12. J. Citrin, Chair ITPA Topical Group on Transport & Confinement (since 2017), 2019
13. J. Citrin, Member Scientific Committee of the International Conference in Data Driven Plasma Science 2019, 2019
14. P. Diomede, P. Viegas, L. Vialto, Member of the Organizing Committee Modelling workshop: All about the electron Boltzmann equation, Eindhoven, Netherlands, 2 Dec 2019, 2019
15. P. Diomede, Member of the Organizing Committee Workshop: Plasma catalysis for renewable Fuels and Chemicals, Eindhoven, Netherlands, 15 Nov 2019, 2019
16. A.J.H. Donné, Appointed EUROfusion Consortium Programme Manager (since 2014), 2019
17. A.J.H. Donné, Chair EIROforum Council from July 2018 to June 2019 (member since 2014, chair since 2018), 2019
18. A.J.H. Donné, Chair Marconi-Fusion High Performance Computer Project Committee (since 2016), 2019
19. A.J.H. Donné, Member of Coordinating Committee of the International Tokamak Physics Activity (ITPA-CC) (since 2014), 2019
20. A.J.H. Donné, Member of the Editorial Board of Nuclear Fusion (since 2011), Editorship, 2019
21. A.J.H. Donné, Chair IEA Technology Collaboration Programmes for Co-operation on Tokamak Programmes (since 2017), 2019
22. A.J.H. Donné, Co-chair of the DEMO Project Board (since 2018), 2019
23. A.J.H. Donné, Member International Scientific Committee of the AAPPS-DPP Conference (Association of Asia Pacific Physical Societies) (since 2017), 2019
24. A.J.H. Donné, Member of the International Advisory Committee of EAST (Hefei, China) (since 2015), 2019
25. A.J.H. Donné, Member of the International Scientific Advisory Board (Fachbeirat) of the Max-Planck-Institut for Plasma Physics (since 2014), 2019

26. *A.J.H. Donné, Member ITER Science and Technology Advisory Committee (since 2016), 2019*
27. *A.J.H. Donné, Member of the Wendelstein 7-X Programme Committee (since 2016), 2019*
28. *H.J.N. van Eck, Chair of the Editorial Board of NEVAC magazine (since 2012), Editorship, 2019*
29. *H. van Eck, Member of the Organizing Committee of the 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications, Eindhoven, Netherlands, 20-24 may 2019, 2019*
30. *T.W. Morgan, Member Program Committee International Conference on Plasma-Facing Materials and Components for Fusion Applications PFMC (since 2019), 2019*
31. *T.W. Morgan, Leader Eurofusion Work Package on Liquid Metal Divertors (2017-2019), 2019*
32. *E. Westerhof, Member of the Organizing Committee of the 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications, Eindhoven, Netherlands, 20-24 may 2019, 2019*

Solar Fuels theme

PhD theses: 5

1. T. Belete, *Evaluation of (plasma-assisted) decomposition of transition metals doped CaCO_3 for CO_2 capture and conversion*, PhD thesis at the Eindhoven University of Technology, 2019/09/05, Promotor: M.C.M. van de Sanden
2. M. Grofulovic, *Energy storage and transfer in non-equilibrium CO_2 plasmas*, PhD thesis at the Eindhoven University of Technology, 2019/10/02, Promotor: R. Engeln, V. Guerra
3. T. Minea, *Non-oxidative coupling of methane in microwave plasmas*, PhD thesis at the Eindhoven University of Technology, 2019/02/25, Promotor: G.J. van Rooij, M.C.M. van de Sanden
4. M. Ramezani, *Coherent light-matter interaction in arrays of plasmonic structures*, PhD thesis at the Eindhoven University of Technology, 2019/04/24, Promotor: J. Gomez Rivas, A. Fiore
5. Y. Zhao, *WO_3 for Photoelectrochemical Water Splitting: from Plain Films to 3D Architectures*, PhD thesis at the Eindhoven University of Technology, 2019/09/13, Promotor: M.C.M. van de Sanden

MSc and BSc theses: 16

1. A.N.A. Ammerlaan, (Internship report Utrecht University:) *Analysis of DFT calculated reaction energies for N_2 dissociation on metal alloy surfaces*, 2019, Mentor: S. Er
2. S. Astruc, (Internship report University of Strasbourg:) *Data-driven 2D materials property prediction*, 2019, Mentor: S. Er
3. M. van Boor, (Bachelor thesis Fontys Eindhoven) *Determining the parameters which influence a CO_2 plasma in its conversion into CO and O_2* , 2019, Mentor: T.W.H. Righart, W.A. Bongers
4. A. Erdogan, (Bachelor thesis Fontys Hogeschool Eindhoven:) *Vibrational excitation: from CO_2 to CO*, 2019, Mentor: Q. Ong
5. A. Ferreira de Abreu, (Master thesis Utrecht University:) *Synthesis of plasmonic nanoparticle catalyst for tracking light driven reactions*, 2019, Mentor: A. Baldi, G. Kumari
6. T. Groeneveld, (Bachelor thesis Fontys Hogeschool Eindhoven:) *Selective assembly of metal nanoparticles using light*, 2019, Mentor: A. Baldi, R. Kamarudheen
7. M.R.A. Heijnen, (Internship report Utrecht University:) *Analysis of DFT calculated reaction energies for CO bonding and dissociation on metal alloy surfaces*, 2019, Mentor: S. Er
8. A.S. Lambooi, (Bachelor thesis Fontys Eindhoven) *Optimizing Carbon Dioxide Dissociation for Storing Sustainable Energy using a Microwave Plasma*, 2019, Mentor: W.A. Bongers, T.W.H. Righart
9. K.C. Pons, (Internship report Utrecht University:) *Analysis of DFT calculated reaction energies for H_2 dissociation on metal alloy surfaces*, 2019, Mentor: S. Er
10. S. Ramhit, (Master thesis Twente University of Technology:) *A data-driven approach for the prediction of electronic energy levels of 2D materials*, 2019, Mentor: S. Er
11. V.R. Reddy, (Master thesis Twente University of Technology:) *CO_2 dissociation dynamics in the microwave plasma reactor using liquid injection*, 2019, Mentor: W.A. Bongers, A.J. Wolf
12. J. Reinders, (Bachelor thesis Fontys Hogeschool Eindhoven:) *Synthesis and Characterization of Anisotropic Plasmonic Nanostructures to Probe the Charge Equilibration at the Nanoscale*, 2019, Mentor: M. Parente, A. Baldi
13. T.W.H. Righart, (Master thesis Eindhoven University of Technology:) *Gas temperatures and residence times in vortex stabilized CO_2 microwave plasmas*, 2019, Mentor: F.J.J. Peeters, W.A. Bongers
14. P. Tensen, (HBO Bachelor Thesis Fontys Hogeschool, Eindhoven:) *Nitrogen Fixation in a Hybrid Plasma Electrocatalytic Reactor chemistry*, 2019, Mentor: S. Welzel, M. Tsampas

15. P. Verhooren, (HBO scriptie Fontys Hogeschool, Eindhoven:) Nitrogen fixation through plasma-enhanced electrocatalysis, 2019, Mentor: S. Welzel, M. Tsampas
16. Y. Zayou, (HBO Bachelor Thesis Fontys Hogeschool, Eindhoven:) Infrared studies on electrocatalytically active materials for energy applications, 2019, Mentor: S. Welzel, M. Tsampas

Publications in peer-reviewed scientific journals: 59

1. J. Aizpurua, M. Ashfold, F. Baletto, J. Baumberg, P. Christopher, E. Cortes, B. de Nijs, Y. Diaz Fernandez, R. Hamans, M. Parente et al., Dynamics of hot electron generation in metallic nanostructures: general discussion, *Faraday Discuss.* 214 (2019) 123-146
2. J. Aizpurua, J. Baumberg, A. Boltasseva, P. Christopher, E. Cortes, S.B. Cronin, B.K. Dadhich, B. de Nijs, P. Deshpande, R. Kamarudheen et al., New materials for hot electron generation: general discussion, *Faraday Discuss.* 214 (2019) 365-386
3. J. Aizpurua, F. Baletto, J. Baumberg, P. Christopher, B. de Nijs, P. Deshpande, Y. Diaz Fernandez, L. Fabris, S. Freakley, M. Parente et al., Theory of hot electrons: general discussion, *Faraday Discuss.* 214 (2019) 245-281
4. S.H.C. Askes, N.J. Schilder, E. Zoethout, A. Polman, E.C. Garnett, Tunable plasmonic HfN nanoparticles and arrays, *Nanoscale* 11 (2019) 20252-20260
5. C. Athanasiou, I. Garagounis, V. Kyriakou, A. Vourros, G.E. Marnellos, M. Stoukides, Demonstration of hydrogen production in a hybrid lignite-assisted solid oxide electrolysis cell, *Int. J. Hydrogen Energy* 44 (2019) 22770-22779
6. D.C.M. van den Bekerom, J.M. Palomares-Linares, T. Verreycken, E.M. van Veldhuizen, S. Nijdam, G. Berden, W.A. Bongers, M.C.M. van de Sanden, G.J. van Rooij, The importance of thermal dissociation in CO₂ microwave discharges investigated by power pulsing and rotational Raman scattering, *Plasma Sources Sci. Technol.* 28 (2019) 055015
7. T. Belete, M.C.M. van de Sanden, M.A. Gleeson, Effects of transition metal dopants on the calcination of CaCO₃ under Ar, H₂O and H₂, *J. CO₂ Util.* 31 (2019) 152-166
8. A.M. Berghuis, A. Halpin, Q. Le-Van, M. Ramezani, S. Wang, S. Murai, J. Gomez Rivas, Enhanced Delayed Fluorescence in Tetracene Crystals by Strong Light-Matter Coupling, *Adv. Funct. Mater.* 29 (2019) 1901317
9. R. Brandenburg, A. Bogaerts, W. Bongers, A. Fridman, G. Fridman, B.R. Locke, V. Miller, S. Reuter, M. Schiorlin, T. Verreycken et al., White paper on the future of plasma science in environment, for gas conversion and agriculture, *Plasma Process. Polym.* 16 (2019) 1700238
10. T.D. Butterworth, B. Amyay, D. van den Bekerom, A.W. van de Steeg, T. Minea, N. Gatti, Q. Ong, C. Richard, C. van Kruijsdijk, J.T. Smits et al., Quantifying methane vibrational and rotational temperature with Raman scattering, *J. Quant. Spectrosc. Radiat. Transf.* 236 (2019) 106562
11. K. Cao, R. van Lent, A.W. Kleyn, M. Kurahashi, L.B.F. Juurlink, Steps on Pt stereodynamically filter sticking of O₂, *Proc. Nat. Acad. Sci. USA* 116 (2019) 13862-13866
12. X. Cao, X.Q. Zhang, R. Sinha, S.X. Tao, A. Bieberle, The Importance of Charge Redistribution during Electrochemical Reactions: A Density Functional Theory Study of Silver Orthophosphate (Ag₃PO₄), *Phys. Chem. Chem. Phys.* 21 (2019) 9531-9537
13. U. Cvelbar, J.L. Walsh, M. Cernak, H.W. de Vries, S. Reuter, T. Belmonte, C. Corbella, C. Miron, N. Hojnik, et al., White paper on the future of plasma science and technology in plastics and textiles, *Plasma Process. Polym.* 16 (2019) 1700228
14. D. Di Carlo Rasi, P.M.J.G. van Thiel, H. Bin, K.H. Hendriks, G.H.L. Heintges, M.M. Wienk, T. Becker, Y.F. Li, R. Riedl, R.A.J. Janssen, Solution-processed tin oxide-PEDOT-PSS interconnecting layers for efficient inverted and conventional tandem polymer solar cells, *Sol. RRL* 3 (2019) 1800366
15. D. Di Carlo Rasi, R.A.J. Janssen, Advances in Solution-Processed Multijunction Organic Solar Cells, *Adv. Mater.* 31 (2019) 1806499

16. C. Duan, Z. Peng, F.J.M. Colberts, S. Pang, L. Ye, O.M. Awartani, K.H. Hendriks, H. Ade, M.M. Wienk, R.A.J. Janssen, *Efficient Thick-Film Polymer Solar Cells with Enhanced Fill Factors via Increased Fullerene Loading*, *ACS Appl. Mater. Interfaces* 11 (2019) 10794-10800
17. S. Eizagirre Barker, S. Wang, R.H. Godiksen, G.W. Castellanos, M. Berghuis, T.V. Raziman, A.G. Curto, J. Gomez Rivas, *Preserving the Emission Lifetime and Efficiency of a Monolayer Semiconductor upon Transfer*, *Adv. Opt. Mater.* 7 (2019) 1900351
18. K. George, M. van Berkel, X.Q. Zhang, R. Sinha, A. Bieberle, *Impedance Spectra and Surface Coverages Simulated Directly from the Electrochemical Reaction Mechanism: A Nonlinear State Space Approach*, *J. Phys. Chem. C* 123 (2019) 9981-9992
19. K. George, X.Q. Zhang, A. Bieberle, *Why does NiOOH cocatalyst increase the oxygen evolution activity of α -Fe₂O₃*, *J. Chem. Phys.* 150 (2019) 041729
20. G. Giammaria, G.J. van Rooij, L. Lefferts, *Plasma Catalysis: Distinguishing between Thermal and Chemical Effects*, *Catal.* 9 (2019) 185
21. P.W.C. Groen, A.J. Wolf, T.W.H. Righart, M.C.M. van de Sanden, F.J.J. Peeters, W.A. Bongers, *Numerical model for the determination of the reduced electric field in a CO₂ microwave plasma derived by the principle of impedance matching*, *Plasma Sources Sci. Technol.* 28 (2019) 075016
22. R.F. Hamans, M. Parente, G.W. Castellanos, M. Ramezani, J. Gomez Rivas, A. Baldi, *Super-resolution Mapping of Enhanced Emission by Collective Plasmonic Resonances*, *ACS Nano* 13 (2019) 4514-4521
23. G.H.L. Heintges, R.A.J. Janssen, *On the homocoupling of trialkylstannyl monomers in the synthesis of diketopyrrolopyrrole polymers and its effect on the performance of polymer-fullerene photovoltaic cells*, *RSC Adv.* 9 (2019) 15703-15714
24. G.H.L. Heintges, K.H. Hendriks, F.J.M. Colberts, M. Li, J. Li, R.A.J. Janssen, *The influence of siloxane side-chains on the photovoltaic performance of a conjugated polymer*, *RSC Adv.* 9 (2019) 8740-8747
25. N. van Hoof, S. ter Huurne, R.H.J. Vervuurt, A.A. Bol, A. Halpin, J. Gomez Rivas, *Diffraction enhanced transparency in a hybrid gold-graphene THz metasurface*, *APL Photonics* 4 (2019) 036104
26. Y.A. Hugo, N. Mazur, W. Kout, F. Sikkema, Z. Borneman, K. Nijmeijer, *Effect of Bromine Complexing Agents on Membrane Performance in Hydrogen Bromine Flow Batteries*, *J. Electrochem. Soc.* 166 (2019) A3004-A3010
27. R. Kishore, X. Cao, X.Q. Zhang, A. Bieberle, *Electrochemical water oxidation on WO₃ surfaces: A density functional theory study*, *Catal. Today* 321-322 (2019) 94-99
28. B.L.M. Klarenaar, A.S. Morillo, M. Grofulovic, M.C.M. van de Sanden, R. Engeln, O. Guaitella, *Excitation and relaxation of the asymmetric stretch mode of CO₂ in a pulsed glow discharge*, *Plasma Sources Sci. Technol.* 28 (2019) 035011
29. V. Kyriakou, D. Neagu, E.I. Papaioannou, I.S. Metcalfe, M.C.M. van de Sanden, M.N. Tsampas, *Co-electrolysis of H₂O and CO₂ on exsolved Ni nanoparticles for efficient syngas generation at controllable H₂/CO ratios*, *Appl. Catal. B-Environm.* 258 (2019) 117950
30. Q. Le-Van, E. Zoethout, E.J. Geluk, M. Ramezani, M. Berghuis, J. Gomez Rivas, *Enhanced Quality Factors of Surface Lattice Resonances in Plasmonic Arrays of Nanoparticles*, *Adv. Opt. Mater.* 7 (2019) 1801451
31. R. van Lent, S.V. Auras, K. Cao, A.J. Walsh, A. Gleeson, L.B.F. Juurlink, *Site-specific reactivity of molecules with surface defects - the case of H₂ dissociation on Pt*, *Science* 363 (2019) 155-157
32. M. Li, A.H. Balawi, P.J. Leenaers, L. Ning, G.H.L. Heintges, T. Marszalek, W. Pisula, M.M. Wienk, S.C.J. Meskers, Y.P. Yi et al., *Impact of polymorphism on the optoelectronic properties of a low-bandgap semiconducting polymer*, *Nat. Commun.* 10 (2019) 2867
33. Q. Liang, G. Brocks, X.Q. Zhang, A. Bieberle, *Monolayer Nitrides Doped with Transition Metals as Efficient Catalysts for Water Oxidation: The Singular Role of Nickel*, *J. Phys. Chem. C* 123 (2019) 26289-26298
34. Y. Liu, F.M. Elam, E. Zoethout, S.A. Starostin, M.C.M. van de Sanden, H.W. de Vries, *Atmospheric-pressure silica-like thin film deposition using 200 kHz/13.56 MHz dual frequency excitation*, *J. Phys. D: Appl. Phys.* 52 (2019) 355201
35. Z. Liu, S. Liu, S. Er, *Hydrogen storage properties of Li-decorated B₂S monolayers: A DFT study*, *Int. J. Hydrogen Energy* 44 (2019) 16803-16810

36. X.T. Ma, S. Li, M. Ronda, R. Chaudhary, L. Lin, G.J. van Rooij, F. Gallucci, G. Rothenberg, N. Raveendran Shiju, V. Hessel, Plasma Assisted Catalytic Conversion of CO₂ and H₂O Over Ni/Al₂O₃ in a DBD Reactor, *Plasma Chem. Plasma Process.* 39 (2019) 109-124
37. T. Minea, A.W. van de Steeg, A.J. Wolf, A.S. da Silva, F.J.J. Peeters, D.C.M. van den Bekerom, T. Butterworth, Q. Ong, M.C.M. van de Sanden, G.J. van Rooij, Role of Electron-Ion Dissociative Recombination in CH₄ Microwave Plasma on Basis of Simulations and Measurements of Electron Energy, *Plasma Chem. Plasma Process.* 39 (2019) 1275-1289
38. D. Neagu, V. Kyriakou, L. Roiban, M. Aouine, C. Tang, A. Caravaca, K. Kousi, I. Schreur, I.S. Metcalfe, P. Vernoux et al., In Situ Observation of Nanoparticle Exsolution from Perovskite Oxides: From Atomic Scale Mechanistic Insight to Nanostructure Tailoring, *ACS Nano* 13 (2019) 12996-13005
39. G. Nikiforidis, G.J. Jongerden, E.F. Jongerden, M.C.M. van de Sanden, M.N. Tsampas, An Electrochemical Study on the Cathode of the Intermediate Temperature Tubular Sodium-Sulfur (NaS) Battery, *J. Electrochem. Soc.* 166 (2019) A135-A142
40. G. Nikiforidis, M.C.M. van de Sanden, M.N. Tsampas, High and intermediate sodium-sulfur batteries for energy storage: development, challenges and perspectives, *RSC Adv.* 9 (2019) 5649-5673
41. V. di Palma, G. Zafeiropoulos, T. Goldsweer, W.M.M. Kessels, M.C.M. van de Sanden, M. Creatore, M.N. Tsampas, Atomic layer deposition of cobalt phosphate thin films for the oxygen evolution reaction, *Electrochem. Commun.* 98 (2019) 73-77
42. H. Patel, R.K. Sharma, V. Kyriakou, A. Pandiyan, S. Welzel, M.C.M. van de Sanden, M.N. Tsampas, Plasma activated electrolysis for cogeneration of nitric oxide and hydrogen from water and nitrogen, *ACS Energy Lett.* 4 (2019) 2091-2095
43. D. Pintossi, M. Saakes, Z. Borneman, K. Nijmeijer, Electrochemical impedance spectroscopy of a reverse electro dialysis stack: A new approach to monitoring fouling and cleaning, *J. Power Sources* 444 (2019) 227302
44. M. Ramezani, A. Halpin, S. Wang, M. Berghuis, J. Gomez Rivas, Ultrafast Dynamics of Non-equilibrium Organic Exciton-Polariton Condensates, *ACS Nano Lett.* 19 (2019) 8590-8596
45. F.M. Sapountzi, V. di Palma, G. Zafeiropoulos, H. Penchev, M.A. Verheijen, M. Creatore, F. Ublekov, V. Sinigersky, W. Arnold Bik, M.N. Tsampas et al., Overpotential analysis of alkaline and acidic alcohol electrolyzers and optimized membrane-electrode assemblies, *Int. J. Hydrogen Energy* 44 (2019) 10163-10173
46. A. Shamu, H. Miedema, Z. Borneman, K. Nijmeijer, Dehydration of supercritical carbon dioxide using dense polymeric membranes: A techno-economical evaluation, *Sep. Purif. Technol.* 224 (2019) 209-218
47. A. Shamu, M. Dunnewold, H. Miedema, Z. Borneman, K. Nijmeijer, Permeation of supercritical CO₂ through dense polymeric membranes, *J. Supercrit. Fluid.* 144 (2019) 63-70
48. A. Shamu, H. Miedema, S.J. Metz, Z. Borneman, K. Nijmeijer, Mass transfer studies on the dehydration of supercritical carbon dioxide using dense polymeric membranes, *Sep. Purif. Technol.* 209 (2019) 229-237
49. R. Sinha, R. Lavrijsen, M.A. Verheijen, E. Zoethout, J.W. Genuit, M.C.M. van de Sanden, A. Bieberle, Electrochemistry of Sputtered Hematite Photoanodes: A Comparison of Metallic DC versus Reactive RF Sputtering, *ACS Omega* 4 (2019) 9262-9270
50. M.C. Sorkun, A. Khetan, S. Er, AqSolDB, a curated reference set of aqueous solubility and 2D descriptors for a diverse set of compounds, *Nat. Sci. Data* 6 (2019) 143
51. P. Viegas, M.C.M. van de Sanden, S. Longo, P. Diomede, Validation of the Fokker-Planck Approach to Vibrational Kinetics in CO₂ Plasma, *J. Phys. Chem. C* 123 (2019) 22823-22831
52. J.K. Wang, K. Datta, C.H.L. Weijtens, M.M. Wienk, R.A.J. Janssen, Insights into Fullerene Passivation of SnO₂ Electron Transport Layers in Perovskite Solar Cells, *Adv. Funct. Mater.* 29 (2019) 1905883
53. S.J. Wang, Q. Le-Van, F. Vaianella, B. Maes, S. Eizagirre Barker, R.H. Godiksen, A.G. Curto, J. Gomez Rivas, Limits to Strong Coupling of Excitons in Multilayer WS₂ with Collective Plasmonic Resonances, *ACS Photonics* 6 (2019) 286-293
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55. R.E.M. Willems, C.H.L. Weijtens, X. de Vries, R. Coehoorn, R.A.J. Janssen, Relating Frontier Orbital Energies from Voltammetry and Photoelectron Spectroscopy to the Open-Circuit Voltage of Organic Solar Cells, *Adv. Energy Mater.* 9 (2019) 1803677

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57. G. Zafeiropoulos, H. Johnson, S. Kinge, M.C.M. van de Sanden, M.N. Tsampas, Solar Hydrogen Generation from Ambient Humidity Using Functionalized Porous Photoanodes, *ACS Appl. Mater. Interfaces* 11 (2019) 41267-41280
58. Y. Zhao, G. Brocks, J.W. Genuit, R. Lavrijsen, M.A. Verheijen, A. Bieberle, Boosting the Performance of WO₃/n-Si Heterostructures for Photoelectrochemical Water Splitting: from the Role of Si to Interface Engineering, *Adv. Energy Mater.* 9 (2019) 1900940
59. E. Zoethout, Probing plasmon excitations in copper nano-clusters with spectroscopic ellipsometry, *Thin Solid Films* 685 (2019) 282-292

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1. N. van Hoof, S. ter Huurne, M. Parente, A. Baldi, J. Gomez Rivas, Non-invasive Local (photo)conductivity Measurements Of Metallic And semiconductor Nanowires In The Near-field, 2019 44th International Conference on Infrared, Millimeter, and Terahertz Waves IRMMW-THz (2019) Th-PM2-6-4
2. Q. Ong, Plasma catalysis as vibrational activation of surface interactions for the RWGS reaction, *Abstracts of Papers of the American Chemical Society* 257 (2019) 176
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1. A. Bogaerts, X. Tu, G.J. van Rooij, M.C.M. van de Sanden, Plasma-based CO₂ conversion, *Carbon Dioxide Utilization: From Fundamentals to Production Processes*, De Gruyter, 2019, p. 585-634
2. F. Peeters, T. Butterworth, *Electrical Diagnostics of Dielectric Barrier Discharges*, Atmospheric Pressure Plasma - from Diagnostics to Applications, IntechOpen Limited, 2019, p. chap.2, OA

Invited lectures at conferences and meetings: 47

1. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, A. Baldi, Sensing and driving chemical reactions using plasmonic nanoparticles, Q.10.1
2. International Conference on Diffusion in Solids and Liquids DSL 2019, 2019/06/24 - 2019/06/28, Athens, Greece, A. Baldi, In-situ TEM studies of hydrogen absorption in single nanocrystals
3. Seminar University of Rome "La Sapienza" 2019, 2019/06/18, Rome, Italy, A. Baldi, Plasmonics for Chemistry: sensing and driving chemical reactions using plasmons

4. *41st Photonics & Electromagnetics Research Symposium PIERS 2019, 2019/06/17 - 2019/06/20, Rome, Italy, A. Baldi, R. Kamarudheen, G. Castellanos, L. Kamp, H.J.H. Clercx, Photothermal versus hot charge carrier effects in plasmon-driven nanoparticle syntheses*
5. *Seminar Eindhoven University of Technology (TU/e) 2019, 2019/06/13, Eindhoven, Netherlands, A. Baldi, Plasmonics for Chemistry: sensing and driving chemical reactions using plasmons*
6. *Seminar National Institute of Standard and Technology (NIST) 2019, 2019/05/13, Gaithersburg, MD, USA, A. Baldi, Plasmonics for Chemistry: sensing and driving chemical reactions using plasmons*
7. *Symposium Energizing the Future 60th anniversary DIFFER Dutch Institute for Fundamental Energy Research, 2019/12/13, Eindhoven, Netherlands, A. Bieberle, What are the research needs for the energy transition? The perspective of a Solar Fuels group leader*
8. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, A. Bieberle, Electrochemical Materials and Interfaces*
9. *Seminar at Computational Center for Energy Research (CCER), 2019/04/18, Eindhoven, Netherlands, A. Bieberle, Modeling of electrochemical interfaces from an experimental viewpoint*
10. *ISPC 2019, 24th International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, R. Engeln, B.L.M. Klarenaar, M.A. Damen, M. Grofulovic, O. Guaitella, M.C.M. van de Sanden, Vibrational kinetics of CO₂ in non-thermal plasma, I-6*
11. *University of Twente Energy Meet-up 2019, 2019/04/08, Enschede, Netherlands, S. Er, Computational discovery of new plasma electrodes for CO₂ conversion*
12. *MRS Fall Meeting 2019, 2019/12/01 - 2019/12/06, Boston, MA, USA, K. George, M. van Berkel, X. Zhang, V. Sinha, R. Sinha, Y. Zhao, A.C. Bronneberg, A. Bieberle, Identifying the Limiting Processes at Electrochemical Interfaces: From Experimental Data to Multiscale Modeling*
13. *21st International Summer School on Vacuum, Electron and Ion Technologies VEIT, 2019/09/23 - 2019/09/27, Sozopol, Bulgaria, M.A. Gleeson, Plasma Chemistry for Efficient Power-to-X*
14. *EERA Joint Programme Hybrid Energy Storage workshop, 2019/11/06 - 2019/11/08, Rome, Italy, A.P.H. Goede, Chemical Energy Storage and Mobility Fuels*
15. *Expert Workshop Minimising the impact of aviation emissions: what way forward?, 2019/10/21 - 2019/10/22, Brussels, Belgium, A.P.H. Goede, CO₂ Neutral Aviation Fuel*
16. *14th International Conference on Catalysis in Membrane Reactors (ICCMR-14), 2019/07/08 - 2019/07/11, Eindhoven, Netherlands, A.P.H. Goede, M.N. Tsampas, S. Er, M.A. Gleeson, R. Dittmeyer, P. Pfeiffer, A. Patyk, V. Middelkoop, S. Labonnote, L. Roses et al., KEROGREEN - CO₂ Neutral Aviation Fuel*
17. *EERA JP Hybrid Energy Storage Meeting, 2019/04/29 - 2019/04/30, Barcelona, Spain, A.P.H. Goede, R. Dittmeyer, EERA Joint Programme on Chemical Energy Storage*
18. *Seminar ICMOL (Valencia Institute of Molecular Science) 2019, 2019/10/24, Valencia, Spain, R.A.J. Janssen, Organic and Perovskite Photodiodes for Solar Cells and Detectors*
19. *15th International Conference on Organic Electronics ICOE 2019, 2019/06/24 - 2019/06/28, Hasselt, Belgium, R.A.J. Janssen, Material, morphology and device design for efficient polymer solar cells, Th, 13:30*
20. *eSCALED School 2019, 2019/04/08, Eindhoven, Netherlands, R.A.J. Janssen, Tutorials: Organic Photovoltaics I and II*
21. *eSCALED School 2019, 2019/04/08, Eindhoven, Netherlands, R.A.J. Janssen, Tutorials: Basics of photovoltaics*
22. *Sigma Symposium 2019: Plastic Fantastic!, 2019/04/04, Nijmegen, Netherlands, R.A.J. Janssen, Polymer Solar Energy*
23. *ORZEL Winter School, 2019/01/14 - 2019/01/16, Katowice, Poland, R.A.J. Janssen, Tutorial: Perovskite Solar Cells*
24. *33rd Conference On Neural Information Processing Systems (NeurIPS 2019), 2019/12/08 - 2019/12/14, Vancouver, Canada, A. Khetan, Molecular geometries as point clouds: Learning physico-chemical properties using DeepSets*
25. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, J.M.V.A. Koelman, Energy Transition: The Big Picture, M3*

26. *Inaugural lecture Professorship Center for Computational Energy Research (TU/e Applied Physics and DIFFER), 2019/02/08, Eindhoven, Netherlands, J.M.V.A. Koelman, Bits, bytes en batterijen*
27. *Masterclass 'Deployment of fusion power' for TU/e Master Science and Technology of Nuclear Fusion, 2019/02/05, Eindhoven, Netherlands, E. Langereis, The Energy Transition: the role of CO₂-neutral fuels and chemicals*
28. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, G.J. van Rooij, CO₂ valorisation in biogas by solar driven plasma reforming*
29. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, G.J. van Rooij, D.C.M. van den Bekerom, T. Butterworth, R. Engeln, T. Minea, A.W. van de Steeg, Q. Ong, M.C.M. van de Sanden, Microwave plasma activation of CO₂ - accessing vibrational non-equilibrium, I-21*
30. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, G. van Rooij, S. van Bavel, Opportunities for fundamental plasma physics to help the chemical industry in the energy transition, FW3.2*
31. *Seminar Leiden University 2019, 2019/12/16, Leiden, Netherlands, M.C.M. van de Sanden, The Energy Transition: Science and Technology aspects. DIFFER's research program on Renewable Energy Driven Chemistry*
32. *12^e Nationaal Warmte Congres 2019 De transitie naar aardgasvrij, 2019/11/28 - 2019/11/29, Eindhoven, Netherlands, M.C.M. van de Sanden, De uitvoering van het Klimaatakkoord; what's next?*
33. *AVS 66th International Symposium and Exhibition, 2019/10/20 - 2019/10/25, Columbus, OH, USA, M.C.M. van de Sanden, The Energy Transition: Science and Technology Development Aspects, TL+MS+VT-TuM1*
34. *First International Conference on Unconventional Catalysis, Reactors and Applications 2019, 2019/10/16 - 2019/10/18, Zaragoza, Spain, M.C.M. van de Sanden, Recent trends in renewable energy driven chemistry for energy conversion and storage: plasma chemistry as the special case*
35. *KNAW-EASAC symposium: CO₂ reduction in the Dutch Climate Agreement - can it be done?, 2019/10/15, Amsterdam, Netherlands, M.C.M. van de Sanden, Strengths and weaknesses of the Dutch Climate Agreement*
36. *10th International Symposium on Plasma Nanosciences (iPlasmaNano X), 2019/09/15 - 2019/09/20, Porec, Croatia, M.C.M. van de Sanden, Recent trends in renewable energy driven chemistry for energy conversion and storage: plasma chemistry as the special case*
37. *34th International Conference on Phenomena in Ionized Gases (ICPIG) / 10th International Conference on Reactive Plasmas (ICRP), 2019/07/14 - 2019/07/19, Sapporo, Japan, M.C.M. van de Sanden, Recent trends in renewable energy driven chemistry for energy conversion and storage: plasmachemistry as the special case, GL-05*
38. *AESIS Impact of Science conference 2019, 2019/06/05 - 2019/06/07, Berlin, Germany, M.C.M. van de Sanden, How to integrate an impact strategy with an academic research strategy, Plenary June, 7th*
39. *Workshop Platform Duurzame Biobrandstoffen: Role of E-fuels and biofuels in energy transition transport, 2019/04/17, The Hague, Netherlands, M.C.M. van de Sanden, New and improved energy technology for the Clean Energy Transition*
40. *Rondetafelgesprek vaste commissie voor Economische Zaken en Klimaat, 2019/04/11, Den Haag, Netherlands, M.C.M. van de Sanden, Scientists give input for the Dutch Policy Climate table Industry*
41. *FYSICA 2019 (NNV), 2019/04/05, Amsterdam, Netherlands, M.C.M. van de Sanden, Renewable energy driven chemistry for the production of fuels and chemicals*
42. *Seminar Arizona State University 2019, 2019/04/03, Tempe, AZ, USA, M.C.M. van de Sanden, The DIFFER Solar Fuels Program: Fundamental Research on Renewable Energy Driven Chemistry*
43. *Virtual Meeting / (US) National Academies Committee on the Decadal Assessment of Plasma Physics, 2019/03/05 - 2019/03/06, Washington, DC, USA, M.C.M. van de Sanden, Plasma in sustainability*
44. *Conferentie De (economische) waarde van wetenschap (uitreiking Rathenau rapport Eieren voor het onderzoek), 2019/02/05, Den Haag, Netherlands, M.C.M. van de Sanden, Economische waarde van wetenschap verbreden naar maatschappelijke impact*
45. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, M. Tsampas, Catalytic and electrochemical processes for energy applications*

46. *KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, M.N. Tsampas, Synergistic combination of solid oxide electrolyte cells with plasma processes*
47. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, S. Welzel, Vibrationally stimulated electro-fuel production in a proton conducting solid oxide electrolysis cell (ViSEP)*

Other oral and poster presentations at (international) conferences and meetings: 122

1. *CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, G.J.W. Aalbers, R. Kamarudheen, R.F. Hamans, A. Baldi, Synthesis of Plasmonic Core@Shell Nanorods Exclusively Driven by Interband Hot Holes, Poster*
2. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, S. van Alphen, V. Vermeiren, T. Butterworth, D.C.M. van den Bekerom, G.J. van Rooij, A. Bogaerts, Gas temperature and vibrational temperature in a pulsed N₂ microwave plasma: a combined experimental and computational study to explore non-equilibrium conditions, Oral, O-34*
3. *7th Workshop on Plasmonics and its Applications PLASMONICA 2019, 2019/06/19 - 2019/06/24, Naples, Italy, A. Baldi, Plasmonics for Chemistry: sensing and driving chemical reactions using plasmons, Oral*
4. *E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, A.C. Bronneberg, M.C.M. van de Sanden, A. Bieberle, Operando Infrared Spectroscopy for Elucidating the Surface Intermediates in Water Splitting, Oral, S.10.1*
5. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, T. Butterworth, A.W. van de Steeg, D.C.M. van den Bekerom, T. Minea, Q. Ong, G.J. van Rooij, Vibrational energy transfer in CH₄ plasma, Oral, O-33*
6. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, A. Erdogan, Q. Ong, D.C.M. van den Bekerom, G. Berden, M.C.M. van de Sanden, G.J. van Rooij, Vibrational excitement: from CO₂ to CO, Poster, A8*
7. *17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, A. Gallo, A. Sepetys, J. Romazanov, S. Brezinsek, H. Bufferand, G. Ciraolo, Y. Corre, S. Ertmer, R. Guirlet, G.J. van Rooij et al., Modeling of tungsten migration in WEST with SolEdge2D-EIRENE and ERO2.0, Poster, PA010*
8. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, J. Gao, F.J.J. Peeters, T.W.H. Righart, A.J. Wolf, H.J.M. Bouwmeester, M.C.M. van de Sanden, W.A. Bongers, The role of flow and quenching on efficiency of CO₂ microwave plasma, Poster, A10*
9. *14th European Congress on Catalysis EuropaCat 2019, 2019/08/18 - 2019/08/23, Aachen, Germany, D. Garcia Rodriguez, J. Garcia, J.W. Niemantsverdriet, C.J. Weststrate, CO adsorption on iron carbide thin film supported on Cu(100) as a Fischer-Tropsch synthesis model catalyst, Poster*
10. *20th Netherlands' Catalysis and Chemistry Conference NCCC 2019, 2019/03/04 - 2019/03/06, Noordwijkerhout, Netherlands, D. Garcia Rodriguez, J. Garcia, D. Sharma, J.W. Niemantsverdriet, C.J. Weststrate, CO adsorption on iron carbide thin film supported on Cu(100) and Cu(111) as a Fischer-Tropsch synthesis (FTS) model catalyst, Poster*
11. *MRS Fall Meeting 2019, 2019/12/01 - 2019/12/06, Boston, MA, USA, K. George, M. van Berkel, X. Zhang, A. Bieberle, Microkinetic Modeling of Water Oxidation in Photoelectrochemical Cells: The Impact of Surface States on the Electrochemistry, Poster*
12. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, K. George, T. Khachatryan, M. van Berkel, A. Bieberle, Linear sweep voltammetry curves simulated directly from the electrochemical reaction mechanism, Poster, P46*
13. *E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, K. George, T. Khachatryan, M. van Berkel, A. Bieberle, Linear sweep voltammetry and impedance spectra simulated directly from the electrochemical mechanism. Photoelectrochemical water splitting, Oral*

14. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, K. George, M. van Berkel, X.Q. Zhang, R. Sinha, A. Bieberle, *Impedance Spectra and Cyclic Voltammetry Curves Simulated Directly from the Electrochemical Reaction Mechanism*, Oral, J.1.3
15. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, K. George, M. van Berkel, X.Q. Zhang, R. Sinha, A. Bieberle, *Multiscale Modeling of Electrochemical Interfaces: A Case Study of Fe_2O_3 for Water Splitting*, Oral, J.7.2
16. 2019 MRS Spring Meeting & Exhibit (Materials Research Society), 2019/04/22 - 2019/04/26, Phoenix, AZ, USA, K. George, M. van Berkel, X.Q. Zhang, R. Sinha, A. Bieberle, *Modeling Impedance Spectra at Semiconductor-Electrolyte Interface - A Multiscale Approach*, Oral, ES11.03.06
17. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, K. George, X.Q. Zhang, A. Bieberle, *Increased oxygen evolution activity on $\text{NiOOH}/\alpha\text{-Fe}_2\text{O}_3$: a DFT study*, Poster, P5.035
18. DG RTD/INEA Project Review Meeting, 2019/12/05, Brussels, Belgium, A.P.H. Goede, KEROGREEN Project, Oral
19. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, A.P.H. Goede, KEROGREEN: CO_2 Neutral Aviation Fuel, Oral
20. 4th clustering meeting on H2020 CCS/CCU/Alternative Fuels and Flexible Power Plants projects, 2019/09/17, Brussels, Belgium, A.P.H. Goede, KEROGREEN - Sustainable aviation fuel, Oral
21. Applications and challenges in Power-to-X-Systems - 3rd Workshop Energy Lab 2.0 meets Neo-Carbon Energy, 2019/06/17 - 2019/06/19, Lappeenranta, Finland, A.P.H. Goede, CO_2 neutral fuels, Oral
22. 27th EUBCE European Biomass Conference, Paving the way to Clean Energy and Fuels, 2019/05/29, Lisbon, Portugal, A.P.H. Goede, The KEROGREEN Project, Oral
23. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, P.W.C. Groen, F.J.J. Peeters, M.C.M. van de Sanden, W.A. Bongers, *Modelling vortex flow in a microwave CO_2 plasma reactor*, Poster, A12
24. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, V. Guerra, L. Terraz, A.S. Morillo, P. Ogloblina, M. Grofulovic, C.D. Pintassilgo, O. Guaitella, T. Silva, *Vibrational energy relaxation in CO_2 and $\text{CO}_2\text{-N}_2$ pulsed discharges*, Poster, P1
25. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, R.F. Hamans, M. Parente, M. Ramezani, G.W. Castellanos, J. Gomez Rivas, A. Baldi, *Super-resolution mapping of plasmon-enhanced processes*, Poster
26. MRS Fall Meeting 2019, 2019/12/01 - 2019/12/06, Boston, MA, USA, R. Hamans, M. Parente, G.W. Castellanos, M. Ramezani, J. Gomez Rivas, A. Baldi, *With super-resolution microscopy, we visualize plasmon-driven catalysis and enhanced light emission*, Poster
27. AMOLF International Nanophotonics Summerschool, 2019/06/18, Amsterdam, The Netherlands, R.F. Hamans, *Super-resolution mapping of plasmon-enhanced processes*, Oral
28. Faraday Discussion 2019 - Hot-electron science and microscopic processes in plasmonics and catalysis, 2019/02/18 - 2019/02/20, London, UK, R.F. Hamans, M. Parente, A. Baldi, *Super-resolution mapping of plasmonic hot electrons*, Poster
29. 44th International Conference on Infrared, Millimeter, and Terahertz Waves IRMMW-THz 2019, 2019/09/01 - 2019/09/06, Paris, France, N. van Hoof, S. ter Huurne, M. Parente, A. Baldi, J. Gomez Rivas, *Non-invasive Local (photo)conductivity Measurements Of Metallic And semiconductor Nanowires In The Near-field*, Oral, Th-PM2-6-4
30. Faraday Discussion 2019 - Hot-electron science and microscopic processes in plasmonics and catalysis, 2019/02/18 - 2019/02/20, London, UK, R. Kamarudheen, G.W. Castellanos, L.P.J. Kamp, H.J.H. Clercx, A. Baldi, *Photothermal vs hot charge carrier effects in plasmon-driven syntheses of nanoparticles*, Poster and Oral Pitch
31. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, R. Kamarudheen, G.W. Castellanos, L.P.J. Kamp, H.J.H. Clercx, A. Baldi, *Photothermal vs hot charge carrier effects in plasmon-driven syntheses of nanoparticles*, Poster, P1.038
32. Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, A. Khetan, S. Er, *BAT-DB: Design of a combinatorial library of electroactive compounds for redox flow batteries*, Poster, P01

33. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, A. Khetan, M.C. Sorkun, S. Er, BAT-DB: Design of a combinatorial library of electroactive compounds for redox flow batteries, Poster, P30*
34. *Mat4Sus Programme Kick-off 2019 Materials for Sustainability, 2019/06/05, Amsterdam, Netherlands, A. Khetan, M.C. Sorkun, S. Er, The COLORFLOW project: materials discovery for redox flow batteries, Oral*
35. *Nanophotonics and Micro/Nano Optics International Conference NANOP 2019, 2019/09/04 - 2019/09/06, Munich, Germany, G. Kumari, E. Zoethout, R. Kamarudheen, A. Baldi, Photocatalysis induced directional surface restructuring in silver nanoparticle catalyst, Poster*
36. *22nd International Conference on Solid State Ionics (SSI-22) 2019, 2019/06/16 - 2019/06/21, PyeongChang, Korea, V. Kyriakou, D. Neagu, E.I. Papaioannou, I.S. Metcalfe, M.C.M. van de Sanden, M.N. Tsampas, Perovskite Fuel Electrodes with Exsolution of Ni Nanoparticles for Electrochemical Syngas Generation, Poster*
37. *22nd International Conference on Solid State Ionics (SSI-22) 2019, 2019/06/16 - 2019/06/21, PyeongChang, Korea, V. Kyriakou, D. Neagu, G. Zafeiropoulos, C. Tang, I.S. Metcalfe, M.C.M. van de Sanden, M.N. Tsampas, Syngas production by Methane-Assisted Co-electrolysis in a Symmetrical Cell with exsolved Rh nanoparticles, Oral*
38. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, V. Kyriakou, D. Neagu, E.I. Papaioannou, M. Tsampas, Co-electrolysis of H₂O-CO₂ on perovskite cathodes with exsolution of transition metal nano-particles, Poster, P5.041*
39. *AVS 66th International Symposium and Exhibition, 2019/10/20 - 2019/10/25, Columbus, OH, USA, R. van Lent, L.B.F. Juurlink, The two-faced role of steps in the isotopic scrambling of Hydrogen on Pt, Poster, SS-TuP13*
40. *15th International Conference on Organic Electronics ICOE 2019, 2019/06/24 - 2019/06/28, Hasselt, Belgium, M.M. Li, R.A.J. Janssen, Impact of polymorphism of a low-bandgap semiconducting polymer on the optoelectronic properties in solution and thin films, Poster, TU30*
41. *CHAINS 2019 [CHemistry As INnovating Science], 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, Q. Liang, A. Bieberle, The Singular Role of Nickel doped Mono layer Nitrides as Efficient Catalysts for Water Oxidation, Oral*
42. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, Q. Liang, G. Brocks, X.Q. Zhang, A. Bieberle, Monolayer Nitrides Doped with Transition Metals as Efficient Catalysts for Water Oxidation: the Singular Role of Nickel, Poster, P11*
43. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, Q. Liang, G. Brocks, X.Q. Zhang, A. Bieberle, Monolayer Nitrides Doped with Transition Metals as Efficient Catalysts for Water Oxidation: the Singular Role of Nickel, Poster and Pitch, P36*
44. *E-MRS Spring Meeting 2019, 2019/05/27 - 2019/05/31, Nice, France, Q. Liang, G. Brocks, X.Q. Zhang, A. Bieberle, First-Principles Investigations of Transition Metal Doped Monolayer Nitrides as Efficient Catalysts for the Water Oxidation, Poster*
45. *KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, U. Mushtaq, R. Sharma, S. Welzel, M.C.M. van de Sanden, M.N. Tsampas, Protonic Ceramic based Electrochemical Cells for the Generation of Renewable Fuels: Development and Characterization, Poster, P3*
46. *22nd International Conference on Solid State Ionics (SSI-22) 2019, 2019/06/16 - 2019/06/21, PyeongChang, Korea, D. Neagu, V. Kyriakou, M. Aouine, A. Caravaca, L. Roiban, C. Tang, K. Kousi, I.S. Metcalfe, P. Vernoux, M.C.M. van de Sanden et al., In situ observation of nanoparticle exsolution from perovskite oxides - from mechanistic insight to new nanostructures, Oral*
47. *Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, G. Nikiforidis, M. Tsampas, M.C.M. van de Sanden, Challenges and perspectives of the intermediate NaS battery, Poster, P1.021*
48. *CHAINS 2019 [CHemistry As INnovating Science], 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, Q. Ong, D.C.M. van den Bekerom, G. Berden, R.A.H. Engeln, M.C.M. van de Sanden, G.J. van Rooij, Vibrational excitement: from CO₂ to CO, Oral*
49. *22nd Workshop on the Exploration of Low-Temperature Plasma Physics (WELTPP-22), 2019/11/28 - 2019/11/20, Kerkrade, The Netherlands, Q. Ong, D.C.M. van den Bekerom, G. Berden, R.A.H. Engeln, M.C.M. van de Sanden, G.J. van Rooij, Vibrational excitement: from CO₂ to CO, Oral, 013*
50. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, Q. Ong, D.C.M. van den Bekerom, G. Berden, M.C.M. van de Sanden, G.J. van Rooij, Vibrational excitement: from CO₂ to CO, Poster, P1-32*

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52. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, Q. Ong, D.C.M. van den Bekerom, G. Berden, M.A. Gleeson, C.J. Weststrate, M.C.M. van de Sanden, G.J. van Rooij, Plasma Catalysis as Vibrational Activation of Surface Interactions, Oral, 012
53. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, A. Pandiyan, V. Kyriakou, R. Sharma, D. Neagu, A.P.H. Goede, S. Welzel, M.C.M. van de Sanden, M.N. Tsampas, Synergistic combination of solid oxide electrolyte cells with plasma processes, Oral
54. 14th International Conference on Catalysis in Membrane Reactors (ICCMR-14), 2019/07/08 - 2019/07/11, Eindhoven, Netherlands, A. Pandiyan, D. Neagu, V. Kyriakou, R. Sharma, V. Middelkoop, S. Weber, A. Goede, S. Welzel, M.N. Tsampas, Electrochemical membrane reactor for oxygen separation after CO₂ plasmolysis, Oral
55. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, M. Parente, A. Baldi, A silver nanowires synthesis with almost no by-products, Oral
56. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, M. Parente, A. Baldi, Plasmonic nanomaterials: charge sensors and conductors, Poster
57. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, M. Parente, A. Baldi, A simple high-throughput synthesis of silver nanowires with almost no by-products, Oral, Q.2.6
58. Faraday Discussion 2019 - Hot-electron science and microscopic processes in plasmonics and catalysis, 2019/02/18 - 2019/02/20, London, UK, M. Parente, R.F. Hamans, A. Baldi, Plasmonic sensing via chemical interface damping in core@shell metal@semiconductor nanoparticles, Poster
59. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, M. Parente, S. Sheikholeslami, G.V. Naik, J.A. Dionne, A. Baldi, Equilibration of photogenerated charge carriers in plasmonic core@shell nanoparticles, Oral, PT8.9
60. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, H.C. Patel, S. Welzel, V. Kyriakou, H. Dzafic, M.C.M. van de Sanden, M.N. Tsampas, Plasmoelectrochemical NO_x production, Poster, P5.032
61. ISPC 2019, 24th International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, F. Peeters, H.J.L. Hendrickx, A.W. van de Steeg, T.W.H. Righart, A.J. Wolf, G.J. van Rooij, W.A. Bongers, M.C.M. van de Sanden, Chemiluminescence as a diagnostic tool in CO₂ microwave plasma, Poster, P1-35
62. PECAS Summer School, 2019/08/01, Copenhagen, Denmark, N.P. Prasad, W.A. Jonkers, R. Sinha, J.P. Hofmann, A. Bieberle, Tuning the size of Ag₃PO₄ cubes for photocatalytic oxygen evolution reaction, Oral
63. Mat4Sus Programme Kick-off 2019 Materials for Sustainability, 2019/06/05, Amsterdam, Netherlands, S. Ramhit, M.C. Sorkun, S. Er, Machine learning for 2D materials electronic property prediction, Poster
64. 40th Gordon Research Conference Dynamics at Surfaces 2019, 2019/07/28 - 2019/08/02, Newport, RI, US, G.J. van Rooij, Plasma Catalysis as Vibrational Activation of Surface Interactions, Poster, P-27
65. 34th International Conference on Phenomena in Ionized Gases (ICPIG) / 10th International Conference on Reactive Plasmas (ICRP), 2019/07/14 - 2019/07/19, Sapporo, Japan, G.J. van Rooij, A.W. van de Steeg, Q. Ong, A. Sovelas da Silva, D.C.M. van den Bekerom, M.C.M. van de Sanden, CO₂ activation in microwave plasma - assessing vibrational non-equilibrium dynamics, Oral, OR15AM-C01
66. 17th International Conference on Plasma-Facing Materials and Components for Fusion Applications 2019, 2019/05/20 - 2019/05/24, Eindhoven, Netherlands, G. van Rooij, O. Meyer, S. Brezinsek, C. Desgrange, S. Ertmer, A. Gallo, J.P. Gunn, T. Loarer, E. Tsitrone, WEST team, Tungsten divertor sources in WEST related to impurity inventory and local plasma conditions, Poster, PB033
67. ACS National Meeting Spring 2019 Chemistry for New Frontiers, 2019/03/31 - 2019/04/04, Orlando, FL, US, G.J. van Rooij, CO₂ Reduction by Microwave Plasma Enabling Efficient Power-to-X Conversion, Oral

68. *KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, M.C.M. van de Sanden, W.A. Bongers, P. Diomedede, F. Peeters, P. Viegas, A.J. Wolf, T.W.H. Righart, G.J. van Rooij, A.W. van de Steeg, Q. Ong et al., Plasma activation of carbon dioxide: status and outlook, Oral*
69. *AVS 66th International Symposium and Exhibition, 2019/10/20 - 2019/10/25, Columbus, OH, USA, R. Sharma, M.C.M. van de Sanden, H. Patel, V. Kyriakou, U. Mushtaq, A. Pandiyan, S. Welzel, M.N. Tsampas, Plasma-assisted Nitrogen Fixation by Water: Development and Evaluation of Hybrid Membrane Based Plasma-Electrochemical Reactor, Oral, PS+SS-ThA7*
70. *14th European Congress on Catalysis EuropaCat 2019, 2019/08/18 - 2019/08/23, Aachen, Germany, D. Sharma, D. Garcia Rodriguez, M.A. Gleeson, J.W. Niemantsverdriet, C.J. Weststrate, Molecular adsorption and dissociation of CO on a defect-rich Co surface, Poster*
71. *ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, R. Sharma, H.C. Patel, V. Kyriakou, S. Pandiyan, S. Welzel, M.C.M. van de Sanden, M.N. Tsampas, Plasma aided Nitric oxide synthesis: electrocatalysis vs catalysis, Poster, P1-54*
72. *20th Netherlands' Catalysis and Chemistry Conference NCCC 2019, 2019/03/04 - 2019/03/06, Noordwijkerhout, Netherlands, D. Sharma, M. Gleeson, D. Garcia Rodriguez, J.W. Niemantsverdriet, C.J. Weststrate, Influence of defects on CO adsorption and dissociation on Co surface, Poster*
73. *31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, A. Silva, A.S. Morillo, A.W. van de Steeg, O. Guaitella, V. Guerra, G.J. van Rooij, Investigation of the effect of Argon addition to CO₂ plasmas in dissociation and vibrational excitation, Poster, B14*
74. *Operando Surface Science - Atomistic Insights into Electrified Solid/Liquid Interfaces WE-Heraeus Seminar 2019, 2019/12/09 - 2019/12/13, Bad Honnef, Germany, V. Sinha, X. Zhang, T.J.H. Vlugt, A. Bieberle, Towards Multiscale Modelling of the Semiconductor-Electrolyte Interface for Oxygen Evolution Reaction, Oral*
75. *National eScience Symposium 2019: Digital Challenges in Open Science, 2019/11/21, Amsterdam, Netherlands, V. Sinha, A. Bieberle, E.J. Meijer, Fuel From Sunlight, Rust and Water, Pitch*
76. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, V. Sinha, X. Zhang, D. Sun, E.J. Meijer, T.J.H. Vlugt, A. Bieberle, Towards multi-scale modelling of the oxygen evolution reaction DFT meets kMC, Poster, P21*
77. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, V. Sinha, X. Zhang, D. Sun, E.J. Meijer, T.J.H. Vlugt, A. Bieberle, Towards multi-scale modelling of the oxygen evolution reaction DFT meets kMC, Poster and Pitch, P35*
78. *Light Management in Photovoltaics (LMPV) Symposium 2019, 2019/08/30, Amsterdam, Netherlands, V. Sinha, X.Q. Zhang, D. Sun, T.J.H. Vlugt, A. Bieberle, Towards Multiscale Modelling of the Oxygen Evolution Reaction: DFT meets kMC, Poster*
79. *Multiscale Modelling of Materials and Molecules (EMMC-eSENCE) meeting 2019, 2019/06/03 - 2019/06/05, Uppsala, Sweden, V. Sinha, X. Zhang, D. Sun, T.J.H. Vlugt, A. Bieberle, Towards Multiscale Modelling of the Oxygen Evolution Reaction: DFT meets kMC, Oral*
80. *CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, M.C. Sorkun, S. Er, Discovering two-dimensional materials via artificial intelligence, Poster, P449*
81. *KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, M.C. Sorkun, S. Astruc, S. Er, Discovering two-dimensional materials via artificial intelligence, Poster, P8*
82. *Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, M.C. Sorkun, S. Astruc, S. Er, Discovering two-dimensional materials via artificial intelligence, Poster, P22*
83. *Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, M.C. Sorkun, A. Khetan, S. Er, Analysis of experimental errors on the ML model development: a case study on aqueous solubility, Poster, P29*
84. *Artificial Intelligence in Engineering Symposium, 2019/10/29, Eindhoven, Netherlands, M.C. Sorkun, S. Er, Discovering two-dimensional materials via artificial intelligence, Poster*
85. *CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, X. Zhou, A. Khetan, S. Er, A multi-scale computational framework for organic electrode materials discovery for Li batteries, Poster, P376*

86. ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, A.F. Sovelas da Silva, A.S. Morillo, A.W. van de Steeg, O. Guaitella, V. Guerra, G.J. van Rooij, Ar addition to CO₂ plasmas for controlling dissociation and vibrational excitation, Oral, 0-67
87. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, A.W. van de Steeg, G.J. van Rooij, In-situ measurements of temperatures and species densities in contracted CO₂ microwave plasma for solar fuel production, Poster, P10
88. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, X. Zhou, A. Khetan, S. Er, A multi-scale computational framework for organic electrode materials discovery for Li batteries, Poster, P18
89. ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, A.W. van de Steeg, T. Butterworth, G.J. van Rooij, Vibrational and gas heating dynamics in molecular plasma assessed by Thomson and Ramanscattering, Oral, 0-96
90. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, A.W. van de Steeg, T. Butterworth, G.J. van Rooij, Gas Heating in the Ignition Phase of Pure Molecular Plasmas assessed by Thomson Raman Scattering, Oral, 05
91. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, S. Tadayon Mousavi, J.G.M. Gulpen, A.J. Wolf, W.A.A.D. Graef, P.M.J. Koelman, J. van Dijk, Reduction and Interpretation of the Underlying Mechanisms in H₂O-He Chemical Reaction Network in Microwave Plasma, Oral, 01
92. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, I. Tezsevin, S. Er, Virtual materials library generation and high-throughput screening for CO₂ reduction catalysts, Poster, P289
93. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, I. Tezsevin, S. Er, High-throughput computational screening of CO₂ reduction and O transport materials, Poster, P9
94. Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, I. Tezsevin, S. Er, High-throughput computational screening of CO₂ reduction and O transport materials, Poster, P23
95. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, I. Tezsevin, S. Er, Virtual materials library generation and high-throughput screening for CO₂ reduction catalysts, Poster, P26
96. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, X. Zhou, A. Khetan, S. Er, A multi-scale computational framework for organic electrode materials discovery for Li batteries, Poster, P376
97. Mat4Sus Programme Kick-off 2019 Materials for Sustainability, 2019/06/05, Amsterdam, Netherlands, I. Tezsevin, S. Er, Computational characterization of Ag electrodes for CO₂ conversion, Poster
98. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, M. Tsampas, K.J. Westrate, Syncat - Electricity to Chemistry, Catalysis for Energy Storage, Oral
99. E-MRS Fall Meeting 2019, 2019/09/16 - 2019/09/19, Warsaw, Poland, M.N. Tsampas, R. Sharma, H.C. Patel, V. Kyriakou, A. Pandiyan, S. Welzel, M.C.M. van de Sanden, Plasma aided electrocatalysis for nitrogen fixation, Oral, N.9.1
100. ACS National Meeting Spring 2019 Chemistry for New Frontiers, 2019/03/31 - 2019/04/04, Orlando, FL, USA, M.N. Tsampas, H. Patel, S. Welzel, R. Sharma, A. Pandiyan, V. Kyriakou, M.C.M. van de Sanden, Plasma aided electrocatalysis for nitrogen fixation, Oral
101. Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, X. Zhou, A. Khetan, S. Er, A multi-scale computational framework for organic electrode materials discovery for Li batteries, Poster
102. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, N. Viswanathan, I. Tezsevin, S. Er, Automated screening of single atom catalysts for solar fuel conversion, Poster, P450
103. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, N. Viswanathan, I. Tezsevin, S. Er, Automated screening of single atom catalysts for solar fuel conversion, Poster, P12
104. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, N. Viswanathan, I. Tezsevin, S. Er, Automated screening of single atom catalysts for solar fuel conversion, Poster, P37

105. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, X. Zhou, A. Khetan, S. Er, A multi-scale computational framework for organic electrode materials discovery for Libatteries, Poster, P14
106. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, S.J. Wang, S. Eizagirre Barker, R.H. Godiksen, F. Vaianella, B. Maes, G. Castellanos Gonzalez, A. Curto, J. Gomez Rivas, Strong coupling of 2D semiconductors with plasmonic nanoantenna arrays, Poster, P1.008
107. AVS 66th International Symposium and Exhibition, 2019/10/20 - 2019/10/25, Columbus, OH, USA, C.J. Weststrate, D. Sharma, D. Garcia Rodriguez, M.A. Gleeson, H.O.A. Fredriksson, J.W. Niemantsverdriet, High resolution XPS to identify C_xH_y surface species on a Cobalt Model Catalyst: new experimental evidence for the importance of alkylidyne as growth intermediates in FT synthesis, Oral, HC+SS+TL-ThA1
108. 14th European Congress on Catalysis EuropaCat 2019, 2019/08/18 - 2019/08/23, Aachen, Germany, C.J. Weststrate, D. Sharma, D. Garcia Rodriguez, M.A. Gleeson, J.W. Niemantsverdriet, Carbon-carbon coupling on a Cobalt surface: how CO spectators determine the selectivity of a surface-catalyzed reaction, Oral
109. ISPC 2019, 24st International Symposium on Plasma Chemistry, 2019/06/09 - 2019/06/14, Naples, Italy, A.J. Wolf, F.J.J. Peeters, T.W.H. Righart, M.C.M. van de Sanden, W.A. Bongers, Elucidating the role of gas dynamics in the vortex-confined microwave plasma on CO₂ dissociation efficiency, Oral, O-56
110. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, A.J. Wolf, F.J.J. Peeters, T.W.H. Righart, P.W.C. Groen, M.C.M. van de Sanden, W.A. Bongers, Efficient CO₂ Decomposition in Microwave Plasmas: Taking "Non" out of Non-Equilibrium Plasma Conversion, Oral, O3
111. 2nd Netherlands conference on Electrochemical Conversion & Materials (ECCM), 2019/06/21, The Hague, Netherlands, G. Zafeiropoulos, H. Johnson, S. Kinge, M.C.M. van de Sanden, M. Tsampas, Making hydrogen from thin air, Oral, Innovative electrochemistry
112. E-MRS Spring Meeting 2019, 2019/05/27 - 2019/05/31, Nice, France, G. Zafeiropoulos, H. Johnson, S. Kinge, M.C.M. van de Sanden, M.N. Tsampas, Solar hydrogen generation from ambient humidity using functionalized porous photoanodes, Oral
113. Faraday Discussion 2019 - Artificial Photosynthesis, 2019/03/25 - 2019/03/27, Cambridge, UK, G. Zafeiropoulos, H. Johnson, S. Kinge, M.C.M. van de Sanden, M.N. Tsampas, Solar hydrogen generation from ambient humidity: Construction of a scalable device, Poster
114. Physics Veldhoven 2019, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, G. Zafeiropoulos, D. Leurs, M. Tsampas, Novel highly structured W/WO₃ photoelectrodes for electrochemical water splitting, Poster, P1.023
115. CHAINS 2019 (CHemistry As INnovating Science), 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, Q. Zhang, A. Khetan, S. Er, A multi-scale computational framework for electroactive materials discovery for redox flow batteries, Poster, P345
116. KEROGREEN Workshop Plasma catalysis for renewable Fuels and Chemicals, 2019/11/15, Eindhoven, Netherlands, Q. Zhang, A. Khetan, S. Er, A multi-scale computational framework for electroactive materials discovery for redox flow batteries, Poster, P13
117. Symposium Solar-to-Products S2P, 2019/11/06, Eindhoven, Netherlands, Q. Zhang, A. Khetan, S. Er, A multi-scale computational framework for electroactive materials discovery for redox flow batteries, Poster
118. Applied Computational Sciences (ACOS) symposium 2019, 2019/10/30, Eindhoven, Netherlands, Q. Zhang, A. Khetan, S. Er, A multi-scale computational framework for electroactive materials discovery for redox flow batteries, Poster, P19
119. Mat4Sus Programme Kick-off 2019 Materials for Sustainability, 2019/06/05, Amsterdam, Netherlands, Q. Zhang, S. Er, High-throughput computational modeling of redox compounds for flow batteries, Poster
120. 31st Symposium Plasma Physics and Radiation Technology, 2019/03/12 - 2019/03/13, Lunteren, The Netherlands, M.L. Zhao, S. Longo, A.J. Wolf, Electron Kinetic Effects On Deuterium Atomic Physics in The Scape-off Layer Plasmas, Poster, B20

121. *Physics Veldhoven 2019*, 2019/01/22 - 2019/01/23, Veldhoven, Netherlands, M. Zhao, A. Chankin, D. Coster, *Kinetic effects of electron parallel transport in the scrape-off layer*, Poster, P8.001
122. *CHAINS 2019 (CHemistry As INnovating Science)*, 2019/12/10 - 2019/12/11, Veldhoven, The Netherlands, X. Zhou, A. Khetan, S. Er, *A multi-scale computational framework for organic electrode materials discovery for Li batteries*, Poster, P376

Awards: 4

1. M. Parente, *First Prize in E-MRS PhD Thesis Competition 2019*, 2019
2. M. Parente, *Graduate Student Award E-MRS Fall meeting 2019*, *Symposium Nanoparticles*, 2019
3. M. Parente, *Best Oral Presentation Award E-MRS Fall Meeting 2019*, *Symposium Nanoparticles*, 2019
4. V. Sinha, *2019 ACOS Best Poster Pitch prize*, 2019

Public events and industry contacts: 17

1. *Lecture in Fontys course Functional and Nanomaterials*, 2019/06/07, Eindhoven, Netherlands, A. Baldi, *Plasmonic Metal Nanoparticles*
2. *Career Day Natuurwetenschappelijke Studievereniging Amsterdam (NSA)*, 2019/03/01, Amsterdam, Netherlands, A. Baldi, *From solar fuels to nanotechnology everything you always wanted to know about energy, but were afraid to ask...*
3. *Symposium Energizing the Future 60th anniversary DIFFER Dutch Institute for Fundamental Energy Research*, 2019/12/13, Eindhoven, Netherlands, S. Er, *Autonomous Energy Materials Discovery*, Virtual poster
4. *NWO Tafel Chemie Meeting*, 2019/12/09, Eindhoven, Netherlands, S. Er, *Autonomous Energy Materials Discovery*
5. *M2i-DIFFER Meeting*, 2019/04/02, Eindhoven, Netherlands, S. Er, *Autonomous Energy Materials Discovery*
6. *Utrecht University PhD&PD Meeting*, 2019/04/02, Eindhoven, Netherlands, S. Er, *Autonomous Energy Materials Discovery*
7. *Shell-CCER Meeting*, 2019/03/19, Eindhoven, Netherlands, S. Er, *Autonomous Energy Materials Discovery*
8. *Tegenlicht Meet Up 040*, 2019/06/11, Eindhoven, Netherlands, E. Langereis, *Tegenlicht Meet Up 040 Deltaplan: Waterstof*
9. *Energy Transition Debate on Offshore energy 2019*, 2019/10/09, Amsterdam, Netherlands, G.J. van Rooij, *Plasma Chemistry for Efficient (Offshore) Power-to-X*
10. *Team Energy TU/e*, 2019/06/06, Eindhoven, Netherlands, G.J. van Rooij, E. Langereis, *Energy Cafe - Cheers on the Energy Transition*
11. *SIM User Forum & Meeting Materials event, Flander's Expo*, 2019/05/22, Ghent, Belgium, G.J. van Rooij, *Plasmachemie voor efficiënte Power-to-X*
12. *Colloquium M4I, Maastricht University*, 2019/03/18, Maastricht, Netherlands, G.J. van Rooij, *Storage of Sustainable Energy and Plasmolysis*
13. *Topsector Chemie Innovatie- en Kennisdiner 2019*, 2019/11/27, Utrecht, Netherlands, M.C.M. van de Sanden, *Introduction on discussion tables on research priorities in Dutch Topsector Chemistry*
14. *Academisch Genootschap Eindhoven*, 2019/03/21, Eindhoven, Netherlands, M.C.M. van de Sanden, *Waterstof als vervanger van aardgas (or the future sustainable energy infrastructure)*
15. *TU/e Innovation Lab: Metalot Meet: Metal Power Partner Reveal*, 2019/02/27, Eindhoven, Netherlands, M.C.M. van de Sanden, *The future sustainable energy infrastructure (with a focus on The Netherlands and the role for (metal) fuels)*
16. *e-Refinery Lunch Lecture TUDelft*, 2019/01/08, Delft, Netherlands, M.C.M. van de Sanden, *The DIFFER Solar Fuels Programme: fundamental research into renewable energy drive chemistry*
17. *Strategic Area Energy TU/e*, 2019/10/04, Eindhoven, Netherlands, V. Sinha, *9th Energy Research Meet - Towards multi-scale modelling of the oxygen evolution reaction in photoelectrochemical cells*

Media appearances: 25

1. *Waterstofopslag in magnesiumpoeder*, *Nederlands Tijdschrift voor Natuurkunde*, 2019/04/04, Interview with A. Baldi
2. *Gas uit zon en wind*, *Financieel Dagblad*, 2019/01/05, General coverage
3. *Nederlandse scheikundigen lossen na vier decennia een hardnekkig probleem op*, *VRT.be*, 2019/01/12, Interview with M.A. Gleeson, R. van Lent
4. *Chemists solve persistent problem after four decades*, *Phys.org*, 2019/01/11, Interview with M.A. Gleeson, R. van Lent
5. *Synthetische kerosine in Rotterdam komt stap dichterbij*, *Technisch Weekblad*, 2019/11/18, Interview with A.P.H. Goede
6. *Een vliegtuig op zonnebrandstof, kan dat?*, *natuurkunde.nl*, 2019/01/24, Interview with G.J. van Rooij
7. *'Haal huizen niet van gas voor 2030'*, *Technisch Weekblad*, 2019/10/22, Interview with M.C.M. van de Sanden
8. *Luchtvaart zoekt schone brandstof*, *De Telegraaf*, 2019/05/27, Interview with M.C.M. van de Sanden
9. *Onderzoeksinstituut Differ in Eindhoven zet stap dichterbij zonnebrandstof*, *Eindhovens Dagblad*, 2019/03/27, Interview with M.C.M. van de Sanden, M.A. Gleeson
10. *Goedkoop waterstofgas uit lucht. Kan dat?*, *Financieel Dagblad*, 2019/03/16, Interview with M.C.M. van de Sanden
11. *Waterstof maken uit lucht*, *BNR Newsradio*, 2019/02/13, Interview with M.C.M. van de Sanden
12. *Zonnecellen van perovskiet veel sterker dankzij fluoride*, *TU/e Cursor*, 2019/05/14, Interview with S.X. Tao
13. *Onderzoekers TU/e ontdekken: fluoride tandpasta beschermt ook zonnecellen*, *ed.nl*, 2019/05/14, Interview with S.X. Tao
14. *Onderzoekers TU/e ontdekken: fluoride tandpasta beschermt ook zonnecellen*, *ad.nl*, 2019/05/14, Interview with S.X. Tao
15. *Fluoride beschermt ook de zonnecel van de toekomst tegen gaatjes*, *BNR Nieuwsradio*, 2019/05/13, Interview with S.X. Tao
16. *Watching metal nanoparticle exsolution*, *Science*, 2019/11/19, Interview with M.N. Tsampas, M.C.M. van de Sanden, V. Kyriakou
17. *Atomen worstelen om de zuurstof: "Ni, je bent weg!"*, *EngineersOnline.nl*, 2019/11/07, Interview with M.N. Tsampas, V. Kyriakou
18. *Onderzoek naar waterstof uit lucht*, *Technisch Weekblad*, 2019/02/26, Interview with M.N. Tsampas
19. *Toyota and Dutch institute team up to produce hydrogen from thin air*, *ngvjournal.com*, 2019/02/20, Interview with M.N. Tsampas
20. *Toyota wil samen met het Nederlandse DIFFER waterstof uit lucht produceren*, *ad.nl*, 2019/02/13, Interview with M.N. Tsampas
21. *Toyota en DIFFER werken samen*, *Autozine.nl*, 2019/02/13, Interview with M.N. Tsampas
22. *Brandstof maken uit lucht*, *EngineersOnline.nl*, 2019/02/12, Interview with M.N. Tsampas
23. *Differ in Eindhoven ontwikkelt zonnecellen die waterstof maken uit lucht*, *Eindhovens Dagblad*, 2019/02/02, Interview with M.N. Tsampas
24. *Waterstof uit de lucht: Belgen presenteren speciaal zonnepaneel*, *NOS.nl*, 2019/02/27, Interview with F.T.M.E. de Vries
25. *Rijden we binnenkort op lucht*, *Radio 1 (België)*, 2019/02/15, Interview with F.T.M.E. de Vries

Positions, including editorships: 57

1. A. Bieberle, Leader Work Group "Microscale and Continuum Modeling" of COST Action Computational materials sciences for efficient water splitting with nanocrystals from abundant elements (2019-2023), 2019
2. A. Bieberle, Member editorial board of the Dutch physics.org website (since 2018), Editorship, 2019
3. S. Er, Guest Editor for MDPI Batteries Special Issue on 'Material Design and Development for Redox Flow Batteries', Editorship, 2019

4. S. Er, Member Scientific Committee Applied Computational Science symposium (ACOS 2019), Oct 30, 2019, Eindhoven, Netherlands, 2019
5. A.P.H. Goede, Member Advisory Board of the EC Horizon 2020 ECRIA project BALANCE (since 2017), 2019
6. A.P.H. Goede, Coordinator European EERA Joint Programme Energy Storage, Subprogram 2 Chemical Energy Storage (since 2017), 2019
7. A.P.H. Goede, Fellow of European Physical Society (since 2011), 2019
8. A.P.H. Goede, Member of the Science Advisory Board of the German BMBF KOPERNIKUS 10 year Programme P2X (since 2016), 2019
9. A.P.H. Goede, Coordinator European EU Horizon2020 project KEROGREEN (since 2017), 2019
10. A.W. Kleijn, Advisor, Sichuan University, Chengdu, China, 2019
11. A.W. Kleijn, Member of the Royal Dutch Society of Science (Haarlem), 2019
12. A.W. Kleijn, Professor, Surface Physics and Chemistry Laboratory, CAEP, Jiangyou, China, 2019
13. A.W. Kleijn, Fellowship of the American Vacuum Society, 2019
14. A.W. Kleijn, Director, Center of Interface Dynamics for Sustainability, Institute of Materials, CAEP, Jiangyou, China (2014-2019), 2019
15. A.W. Kleijn, Fellow of the Institute of Physics (UK) (since 2012), 2019
16. A.W. Kleijn, Professor, Leiden Institute of Chemistry, Gorlaeus Laboratories, Leiden University, 2019
17. A.W. Kleijn, Fellow of the Royal Society of Chemistry (UK) (since 2017), 2019
18. A.W. Kleijn, Editorial board member Journal Progress in Surface Science (since 1997), Editorship, 2019
19. E. Langereis, Co-organizer Symposium Solar-to-Products S2P Essential building blocks for a carbon neutral future, Eindhoven, Netherlands, 2019
20. E. Langereis, Co-organizer TU/e Energy Days (since 2013), 2019
21. E. Langereis, Member of NERA working group (Netherlands Energy Research Alliance), 2019
22. G.J. van Rooij, International Scientific Advisory Committee International Summer School on Vacuum, Electron and Ion Technologies VEIT (since 2015), 2019
23. G.J. van Rooij, Lecturer Course series Optical Diagnostics, techniques and applications at Eindhoven University of Technology (since 2018), 2019
24. G.J. van Rooij, Lecturer Course series Plasma Surface Interactions at Eindhoven University of Technology (since 2009), 2019
25. G.J. van Rooij, Member of the Organisational Committee of the Annual Dutch Symposium on Plasma Physics & Radiation Technology, Lunteren, 2019
26. G.J. van Rooij, Member Editorial Board Nederlands Tijdschrift voor de Natuurkunde, Editorship, 2019
27. M.C.M. van de Sanden, Member of the Scientific Advisory Board of the CNR Institute of Nanotechnology, Salento (since 2018), 2019
28. M.C.M. van de Sanden, Scientific Advisory Board member Nanolab@TU/e TU Eindhoven (since 2013), 2019
29. M.C.M. van de Sanden, Organizer AVS Conference - Program: Plasma Science and Technology division (since 2012), 2019
30. M.C.M. van de Sanden, G.J. van Rooij, Member International Advisory Committee Summer school on Vacuum, electron and ion technologies, Sozopol, Bulgaria (since 2017), 2019
31. M.C.M. van de Sanden, Member Koninklijke Hollandsche Maatschappij der Wetenschappen (since 2010), 2019
32. M.C.M. van de Sanden, Board member TKI Gas, Groningen (since 2014), 2019
33. M.C.M. van de Sanden, KNAW committee member Jury new members Science Division (since 2014), 2019
34. M.C.M. van de Sanden, Parttime professorship in the Department of Applied Physics (since 2011 after fulltime since 2000), 2019
35. M.C.M. van de Sanden, KNAW ad hoc committee member Candidate selection new KNAW Board members (since 2019), 2019

36. M.C.M. van de Sanden, Chair Advisory Committee ECCM (Elektrochemische Conversie & Materialen) of Dutch Top Research Sections Energy, Chemistry and HTSM (since 2017), 2019
37. M.C.M. van de Sanden, Member WEST Governance Board in France (since 2014), 2019
38. M.C.M. van de Sanden, Member of the EASAC Energy Steering Panel (European Academies) (since 2014), 2019
39. M.C.M. van de Sanden, Editorial Board member of the journal *Global Transitions* (since 2018), Editorship, 2019
40. M.C.M. van de Sanden, International Advisory Board for the journal *Plasma Processes and Polymers* (since 2002), 2019
41. M.C.M. van de Sanden, Delegation Leader Innovation Working Visit Energy Transition Berlin-Potsdam, Germany, 21-22 May, 2019, 2019
42. M.C.M. van de Sanden, KNAW committee member Evaluation elections new members (since 2014), 2019
43. M.C.M. van de Sanden, Member Scientific Committee First International Conference on Unconventional Catalysis, Reactors and Applications (UCRA 2019), Oct 16-18, 2019, Zaragoza, Spain, 2019
44. M.C.M. van de Sanden, Nederlandse Natuurkundige Vereniging (NNV) vertegenwoordigend lid in de EPS divisie Energie, 2019
45. M.C.M. van de Sanden, KNAW committee member Raad voor Natuur- en Technische Wetenschappen (RNTW) (since 2017), 2019
46. M.C.M. van de Sanden, Fellow of the International Plasma Chemistry Society (since 2017), 2019
47. M.C.M. van de Sanden, Member of the Editorial Board of the Journal "Applied Sciences" (since 2016), Editorship, 2019
48. M.C.M. van de Sanden, Member of the Royal Netherlands Academy of Arts and Sciences (KNAW) (since 2013), 2019
49. M.C.M. van de Sanden, Member Advisory Committee of International Conference on Reactive Plasmas (ICRP) (since 2014), 2019
50. M.C.M. van de Sanden, Member Scientific Board Netherlands Energy Research Alliance (NERA) (since 2017), 2019
51. M.C.M. van de Sanden, Executive Committee Member EERA (European Energy Research Alliance) for NERA (2019-2021), 2019
52. M.C.M. van de Sanden, Senior Advisory Board Member of Plasma Sources: Science and Technology (since 2005, Senior since 2014), Editorship, 2019
53. M.C.M. van de Sanden, Member KNAW Klankbordcommissie Noordzee (since 2019), 2019
54. M.C.M. van de Sanden, S. Welzel, Consultants to PREMiere Project - CO₂ Plasmas: a fRiEndly MEdium for Renewable Energy (since 2016), 2019
55. M.C.M. van de Sanden, Member of the Euratom Programme Committee (Fusion) (since 2014), 2019
56. S. Welzel, Lecturer Course series Optical Diagnostics, techniques and applications at Eindhoven University of Technology: Infrared Absorption Spectroscopy: Theory, techniques & applications (since 2014), Oral, 2019
57. S. Welzel, Member of the Organizing Committee of the Workshop on the Exploration of Low Temperature Plasma Physics, Kerkrade, Netherlands (since 2012), 2019