Personal Information

Date of birth: 28th September 1978 **Nationality:** Belgian
Languages: Dutch (Flemish), English, French **Website:** https://www.uhasselt.be/dsos
ORCID: 0000-0001-7883-3393 **ResearcherID:** A-7525-2009
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Education

05/2005 **Ph.D. degree in Chemistry**
Chemistry Department, Katholieke Universiteit Leuven, Belgium (promoter: Prof. Wim Dehaen)

07/2000 **Master's Degree in Chemistry** (*summa cum laude*)
Katholieke Universiteit Leuven, Belgium

07/1998 **Bachelor's Degree in Chemistry**
LUC Diepenbeek, Belgium

Employment History

2021- **Full Professor ('Gewoon Hoogleraar')**
Department of Chemistry, Hasselt University, Belgium
Guest Professor (10%)
IMEC (Interuniversitair Micro-Elektronica Centrum) vzw, Leuven, Belgium

2018-2020 **Professor ('Hoogleraar')**
Department of Chemistry, Hasselt University, Belgium

2014-2017 **Associate Professor ('Hoofddocent')**
Department of Chemistry, Hasselt University, Belgium

2012-2013 **Assistant Professor ('Docent')**
Department of Chemistry, Hasselt University, Belgium

2009-2012 **Assistant Professor ('Docent') – 20% / Postdoctoral Fellow Research Foundation Flanders (FWO Vlaanderen) – 80%**
Department of Chemistry, Hasselt University, Belgium

2006-2009 **Postdoctoral Fellow Research Foundation Flanders (FWO Vlaanderen)**
Chemistry Department, Katholieke Universiteit Leuven, Belgium (promoter: Prof. Wim Dehaen)
Postdoctoral research stays in the groups of Prof. Harry Anderson (Oxford University, UK – 2009) and Prof. Eric Rose (Université Pierre et Marie Curie, Paris – 2007)

2005-2006 **Postdoctoral Fellow KU Leuven**
Chemistry Department, Katholieke Universiteit Leuven, Belgium (promoter: Prof. Wim Dehaen)

Institutional Responsibilities

2022- **President of the Chemistry Department** (Hasselt University)
Member of the Executive Committee of the Institute for Materials Research (IMO-IMOMEC) (Hasselt University)
Member 'Statutaire Commissie van Advies' (Hasselt University)
Vice-President of the Examination Committee for the Master Materiomics (Hasselt University)

2019- **Vice-President of the Educational Management Team (OMT) Bachelor Chemistry** (Hasselt University)
Member Research Infrastructure Advisory Board Institute for Materials Research (Hasselt University)

2018- **President of the Examination Committee for the Bachelor Chemistry** (Hasselt University)
Member of the Laboratory Safety Commission (Hasselt University)

2019-2021 **Vice-President of the Chemistry Department** (Hasselt University)

2013-2019 **Member of the Council for Student Facilities** (Hasselt University)

2009- **Member of the Faculty Board of the Faculty of Sciences** (Hasselt University)
Member of the Board of the Chemistry Department (Hasselt University)

Teaching Activities

2025-2026 **Hasselt University**

Ba Chemistry: Structuur en reactiviteit van organische verbindingen (7 ECTS), Synthesemethoden en -strategie voor organische verbindingen (5 ECTS), Structuuranalyse en onderzoeksproject in de organische chemie (6 ECTS), Spectroscopie: verdieping (4 ECTS) - Ma Biomedical Sciences: Liquids, solids, and biological

matter (4 ECTS) - Ma Materiomics: Geavanceerde functionele organische en polymere materialen (3 ECTS), Materials for organic electronics (3 ECTS), Materials Design and Synthesis (3 ECTS)

Approved Research Projects (last 5 years)*

2022-2025 **FWO WEAVE Research Project: 570'000 €** (UHasselt; partner N. Banerji, UBern – Project leader K. Vandewal - UHasselt)
'Understanding electronic-ionic interactions for high-performance and stable organic electrochemical transistors'

2021-2024 **HORIZON2020 FET-OPEN Project: 539'000 €** (imo-imomec; coordinator L. Lutsen)
'Mixed Ionic and electronic Transport In Conjugated polymers for bioelectronicS' (MITICS)

2021-2024 **FWO Research Project: 540'000 €** (UHasselt – Project leader W. Maes)
'Challenging the limits of near-infrared emission by all-organic fluorophores'

2020-2023 **FWO Medium-Size Research Infrastructure: 369'990 €** (UHasselt – Project leader W. Maes)
'MALDI-ToF mass spectrometer for advanced polymer analysis'

2018-2021 **FWO Research Project: 440'000 €** (UHasselt – Project leader W. Maes)
'Unraveling and stretching the fundamental limits of near-infrared photodetection based on organic semiconductors'

2018-2021 **FWO Research Project: 240'000 €** (UHasselt; partner G. Van Assche, VUB – Project leader W. Maes)
'Solution-processed bulk heterojunction organic cavities for near-infrared photodetection'

Supervision of Ph.D. Researchers

2010- 30 graduated Ph.D.'s (1st promotership only, graduation year in brackets): Sarah Van Mierloo (2012), Lidia Marin (2012), Toon Ghoos (2013), Süleyman Kudret (2013), Jurgen Kesters (2015), Pieter Verstappen (2015), Julija Kudrjasova (2015), Mirco Tomassetti (2015), Sanne Govaerts (2017), Geert Pirotte (2017), Yasmine Braeken (2017), Jeroen Brebels (2017), Ruben Lenaerts (2019), Dries Devisscher (2019), Gaël Heintges (2019), Jorne Raymakers (2019), Frederik Verstraeten (2020), Tom Cardeynaels (2020), Sam Gielen (2021), Jasper Deckers (2021), Omar Beckers (2021), Tom Vandermeeren (2022), Simon Paredis (2023), Jochen Vanderspikken (2023), Sander Smeets (2023), Kaat Valkeneers (2024), Dries Theunissen (2025), Sonny Brebels (2025), Mathias Fraiponts (2025), Lize Bynens (2025)
9 ongoing Ph.D. projects: Nele Theysmans (2026), Adrian Lathouwers (2027), Louis Jackers (2027), Daan Coenen (2027), Laura Leten (2028), Ebbe Loos (2029)

Panels - Boards - Reviewing

2022-2024 **President of the Recruitment Committee to appoint Professors in Computational Materials Chemistry, Electrochemistry and Catalysis, Hybrid Organic/Inorganic Materials Chemistry, Biochemistry and Biopolymer Materials at Hasselt University**

2020 **External reviewer promotion committee, College of Science at the National Chiao Tung University, Taiwan**

2018 **Committee Tenure Track Professorship 'Materials engineering: polymers', Vrije Universiteit Brussel**

2017 **Commission Member Habilitation à Diriger des Recherches – Université d'Aix-Marseille**

2017 **Member Assessment Committee Researcher Position at DTU Energy (Technical University of Denmark)**

2016 **Expert Evaluator FNP Prize - Chemistry and Materials Science, Foundation for Polish Science (50 k€)**

2015-2019 **Editorial Board Member 'International Journal of Photoenergy'**

Refereeing **Scientific Journals:** Advanced Materials, Advanced Functional Materials, Advanced Energy Materials, Organic Electronics, Journal of the American Chemical Society, Journal of Physical Chemistry, Journal of Materials Chemistry, ACS Applied Materials & Interfaces, Chemistry of Materials, Angewandte Chemie International Edition, Chemical Reviews, Chemical Communications, Chemistry – A European Journal, European Polymer Journal, Polymer Chemistry, Materials Today, Dyes and Pigments, …

Projects: ERC Advanced Grant, ERC Starting Grant, Agence Nationale de la Recherche (ANR, France), Deutsche Forschungsgemeinschaft (DFG), RSC Leverhulme – Royal Society Africa Award, Swedish Research Council (Vetenskapsrådet), Competitive Research Grants (CRG) program at KAUST (Saudi Arabia), FWO-NSFC Flemish-Chinese bilateral projects, …

Active Memberships

Royal Flemish Chemical Society (**KVCV**, since 2017), **Belgian Polymer Group** (**BPG**, since 2010)

* Excluding numerous individual Ph.D. and postdoc fellowships as a main promoter.

Organization of Conferences (last 5 years)

2026 **SPIE Photonics Europe – Organic Electronics and Photonics: Fundamentals and Devices IV - Co-chair**
Strasbourg, France

2025 **16th Japan-Belgium Symposium on Polymer Science – Chair**
Hasselt, Belgium

2024 **SPIE Photonics Europe – Organic Electronics and Photonics: Fundamentals and Devices IV - Co-chair**
Strasbourg, France

2022 **15th Japan-Belgium Symposium on Polymer Science – Co-chair**
Yokohama, Japan

2022 **SPIE Photonics Europe – Organic Electronics and Photonics: Fundamentals and Devices III - Co-chair**
Strasbourg, France

Invited Talks/Oral Contributions to International Conferences (last 2 years)

2025 **Groupement de Recherche – Organic Electronics for the new eRA (GDR-OERA)** (Grenoble, France)
Continuous (droplet) flow chemistry for polymer-based organic electronics

2025 **B-MRS - XXIII Brazil Materials Research Society Meeting** (Salvador/Bahia, Brazil)
On the importance of chemical precision in organic electronics

2025 **Workshop on synthesis and characterization of conjugated polymers** (Chalmers University of Technology, Göteborg, Sweden)
On the importance of chemical precision in polymer/organic electronics

2024 **MATSUSFall24** (Lausanne, Switzerland)
Impact of homocoupling structural defects on materials and OECT device characteristics

2024 **Future Youth Forum – Technical Institute of Physics and Chemistry, CAS** (*Beijing, China*)
On the importance of chemical precision in polymer/organic electronics

2024 **Brightland Polymer Days** (Maastricht, The Netherlands)
On the importance of chemical precision in organic electronics

2024 **38th Australian Polymer Symposium** (Auckland, New Zealand)
On the importance of chemical precision in organic electronics

Prizes and Awards

2013 2013 recipient (Belgium) Young Investigator for the Organic Division of EuCheMs

Major Scientific Achievements

- **Independent research since 2010**
- **222 peer-reviewed journal articles**
- **H-index = 48, 7976** (*Google Scholar*; H-index = 43 in *Web of Science*)

I'm currently heading the research group 'Design & Synthesis of Organic Semiconductors' (DSOS) at the Chemistry Department of Hasselt University. The group was founded in 2010, soon after my appointment at Hasselt University. Its key competences relate to the synthesis and characterization of organic semiconducting materials – conjugated polymers as well as small molecule chromophores – and their integration in optoelectronic devices and advanced healthcare applications. These activities are strongly embedded in the 'Institute for Materials Research' (imo-imomec) of Hasselt University, facilitating interactions with materials and device physics experts and providing access to state-of-the-art infrastructure for advanced materials research. We conduct both fundamental and more applied research and have a strong focus on Ph.D. training. Over the years, I have built a strong network and we have collaborated with numerous leading groups in the field of organic electronics.

Conjugated Polymer Synthesis

Since my arrival at Hasselt University in 2009, conjugated polymer synthesis and characterization has been at the centre of my research activities. We evolved from controlled (block co)polythiophene synthesis to state-of-the-art push-pull copolymers and have always put a strong emphasis on material quality and the elucidation of structure-property relationships. In recent years, our work on the development of continuous flow polymerization protocols for the large-scale production of high-quality donor-acceptor copolymers and the elucidation of the importance of structural (notably homocoupling) defects on the performance of such polymers in devices have received quite some attention. Some relevant

publications: *Chem. Mater.* **2023**, *35*, 8158 (DOI:10.1021/acs.chemmater.3c01646), *Adv. Funct. Mater.* **2023**, 2309403 (DOI:10.1002/adfm.202309403), *J. Mater. Chem. C* **2022**, *10*, 1606 (DOI:10.1039/D1TC04635G), *Adv. Electron. Mater.* **2018**, 1700481 (DOI:10.1002/aelm.201700481).

Organic Solar Cells

Over the past 15 years, my group has worked on the development of photoactive materials for organic/polymer solar cells. Organic thin-film photovoltaics have strong potential as an innovative source of renewable energy, adding appealing features to classical solar cell technology, in particular in terms of architectural freedom (flexibility, reduced weight, colour, semi-transparency), low-light performance, and low-cost (high-throughput) large-area production. Despite the impressive recent progress in the field, especially in terms of device efficiency (nowadays exceeding 19%), further dedicated research efforts are still required to enable successful market entrance. Over the years, we have addressed all three parts of the photovoltaic triangle, i.e. efficiency, stability, and cost, with dedicated (Ph.D.) research projects, pursuing the rationalization of structure-property relations. Some key publications: *Energy Environ. Sci.* **2024** (DOI: 10.1039/d4ee01409j), *Adv. Funct. Mater.* **2023**, 2308666 (DOI:10.1002/adfm.202308666), *Joule* **2021**, *5*, 2365 (DOI:10.1016/j.joule.2021.06.010), *Adv. Energy Mater.* **2020**, 2002095 (DOI:10.1002/aenm.202002095).

Organic Photodetectors

Over the years, our group has also engaged in a number of projects directed towards near-infrared organic photodetectors (NIR-OPDs). For UV-visible light detection, OPDs can match and even surpass the performance of commercial inorganic photodetectors. Unfortunately, organic materials generally show limited absorption in the NIR. For this reason, we target novel NIR-absorbing materials for regular bulk heterojunction NIR-OPDs as well as organic cavity enhanced photodetectors, with the aim to elucidate the limitations of NIR photodetection based on organic semiconductors. Representative publications: *Adv. Mater.* **2024**, 2405061 (DOI:10.1002/adma.202405061), *Mater. Horizons* **2023**, *10*, 5704 (DOI:10.1039/D3MH01010D), *Nat. Photon.* **2023**, *17*, 368 (DOI:10.1038/s41566-023-01173-5), *Adv. Funct. Mater.* **2021**, *31*, 2108146 (DOI: 10.1002/adfm.202108146), *Adv. Mater.* **2020**, 2003818 (DOI:10.1002/adma.202003818), *J. Mater. Chem. C* **2020**, *8*, 10098 (DOI:10.1039/D0TC01435D).

Thermally Activated Delayed Fluorescence (TADF)

The TADF luminescence principle enables to realize unique optical and electronic properties arising from the efficient thermal equilibration of the lowest singlet (S_1) and triplet (T_1) excited states of organic fluorophores. As a result, TADF-based organic light-emitting diodes show significantly upgraded device performances, comparable to those provided by traditional rare metal complexes. To realize efficient TADF, organic emitters require a very small energy difference (ΔE_{ST}) between their S_1 and T_1 excited states, which enhances the T_1->S_1 reverse intersystem crossing rate. Such excited state equilibration is attainable by intramolecular charge transfer within systems containing spatially separated donor and acceptor moieties. The critical point of this molecular design is the combination of a small ΔE_{ST} (≤ 100 meV) with a reasonable radiative decay rate (>10^6 s^{-1}) to overcome competitive non-radiative pathways, leading to highly luminescent materials. In the DSOS group, advanced (chiral) TADF materials are nowadays designed, synthesized, and characterized by a rational approach combining complementary computational and synthetic materials expertise. For the quantum-chemical calculations, we have a close collaboration with Prof. Benoît Champagne (University of Namur). Thorough photophysical understanding is pursued in collaboration with the group of Andy Monkman at Durham University. Representative publications: *J. Mater. Chem. C* **2024**, *12*, 9255 (DOI:10.1039/D4TC01214C), *Phys. Chem. Chem. Phys.* **2023**, *25*, 29842 (DOI:10.1039/d3cp03695b), *J. Mater. Chem. C* **2022**, *10*, 5840 (DOI:10.1039/d1tc04913e), *J. Mater. Chem. C* **2022**, *10*, 4775 (DOI:10.1039/D1TC04885F).

Bio-Imaging and Theranostics

We also aim to apply unique organic semiconducting materials for advanced healthcare. The initial focus was on conjugated polymer nanoparticles for bio-imaging, but this has later on been extended to novel photosensitizer molecules for fluorescence-guided photodynamic therapy. Representative publications: *J. Mater. Chem. C* **2022**, *10*, 9344 (DOI: 10.1039/D2TC01526A), *ChemPhysChem* **2021**, *22*, 1488 (DOI:10.1002/cphc.202100269), *Chem. Eur. J.* **2020**, *26*, 15212 (DOI:10.1002/chem.202002549), *J. Colloid Interface Sci.* **2017**, *504*, 527 (DOI:10.1016/j.jcis.2017.05.072).

Other Research Activities

Beyond these main lines of research, I also have a strong interest in the synthesis, basic spectroscopic properties, and applications of porphyrinoid materials (notably corrole macrocycles), specifically in relation to the organic electronics and advanced healthcare applications listed above. Detailed photophysical characterization of these materials is conducted in close collaboration with spectroscopists and theoretical chemists. My group has also worked on the decoration of boron-doped diamond films with organic chromophores and the elucidation of the charge-collection mechanism upon applying such functionalized diamond electrodes.

Peer-Reviewed Publications (since 2021)

222. "Doped Organic Semiconductors for Bolometric Infrared Detection": Bijnens, B.; Gielen, S.; Maes, W.; Vandewal, K., *Adv. Funct. Mater.* **2025**, 202514973 (IF_{2023} 18.5) – DOI: 10.1002/adfm.202514973
221. "Investigating XC-functionals towards describing experimentally relevant excited state properties of NIR-BODIPY derivatives": Fraiponts, M.; Maes, W.; Champagne, B., *Phys. Chem. Chem. Phys.* **2025**, *27*, 16407 (IF_{2023} 2.9) – DOI: 10.1039/D5CP01830
220. "Design, synthesis, and photovoltaic performance of regioisomeric D18 – Impact of cross-conjugation on electronic structure and solar cell efficiency": Valkeneers, K.; Leten, L.; Gielen, S.; Cardeynaels, T.; Mertens, S.; Vanderspikken, J.; Arwani, R. T.; Marks, A.; Salleo, A.; Kumar, R. S. N.; Lutsen, L.; Vandewal, K.; Maes, W., *Org. Electron.* **2025**, *145*, 107309 (IF_{2023} 2.6) – DOI: 10.1016/j.orgel.2025.107309
219. "Strategies for Advancing Near-Infrared Organic Light-Emitting Diodes: Innovations in Luminescent Materials, Device Architectures, Fabrication Methods, and Applications": Ahadzadeh, S.; Brebels, S.; Maes, W.; Deferme, W., *Adv. Funct. Mater.* **2025**, 2419599 (IF_{2023} 18.5) – DOI: 10.1002/adfm.202419599
218. "Reactive oxygen species responsive dextran-thioketal conjugate nanocarriers for the delivery of hydrophilic payloads": Nayak, S.; Caz, N.; Derveaux, E.; Smeets, S.; Cardeynaels, T.; Wolfs, E.; Adriaensens, P.; Maes, W.; Ethirajan, A., *Carbohydr. Polym.* **2025**, *356*, 123375 (IF_{2023} 10.7) – DOI: 10.1016/j.carbpol.2025.123375
217. "State diagrams of PBTTT derivatives mixed with PC61BM and their relevance for organic electronics: influence of incongruently melting co-crystals and homocoupling defects": Liu, Z.; Vanderspikken, J.; Vandewal, K.; Maes, W.; Goderis, B.; Nies, E.; Van den Brande, N.; Van Mele, B., *Small* **2025**, 2410993 (IF_{2023} 13.0) – DOI: 10.1002/smll.202410993
216. "Organic Electrochemical Transistor Channel Materials: Copolymerization versus Physical Mixing of Glycolated and Alkoxylated Polymers": Bynens, L.; Zhang, K.; Cavassin, P.; Goossens, A.; Vanderspikken, J.; Castillo, T. C. H.; Tsokkou, D.; Marks, A.; Magni, A.; Weaver, K.; Lutsen, L.; Inal, S.; Vandewal, K.; Banerji, N.; Maes, W., *Adv. Funct. Mater.* **2025**, 2423913 (IF_{2023} 18.5) – DOI: 1.1002/adfm.202423913
215. "Pyrene-based self-assembled monolayer with improved surface coverage and energy level alignment for perovskite solar cells": Lenaers, S.; Lammar, S.; Krishna, A.; Stacchini, V.; Cardeynaels, T.; Penxten, H.; Weijtens, C.; Ruttens, B.; Maes, W.; D'Haen, J.; Musiienko, A.; Aernouts, T.; Lutsen, L.; Vanderzande, D.; Poortmans, J.; Van Gompel, W., *Adv. Funct. Mater.* **2024**, 2411922 (IF_{2023} 18.5) – DOI: 10.1002/adfm.202411922
214. "Removing homocoupling defects in alkoxy/alkyl-PBTTT enhances polymer:fullerene co-crystal formation and stability": Liu, Z.; Vanderspikken, J.; Mantegazza, P.; Moro, S.; Hamid, M.; Mertens, S.; Van den Brande, N.; Lutsen, L.; Lemaur, V.; Beljonne, D.; Costantini, G.; Vandewal, K.; Van Mele, B.; Maes, W.; Goderis, B., *Adv. Funct. Mater.* **2024**, 2413647 (IF_{2023} 18.5) – DOI: 10.1002/adfm.202413647
213. "Toward an automated analysis of homocoupling defects using MALDI-MS and open-source computer software": Bochenek, M.; Ciach, M. A.; Smeets, S.; Beckers, O.; Vanderspikken, J.; Miasojedow, B.; Domżał, B.; Valkenborg, D.; **Maes, W.**; Gambin, A., *J. Am. Soc. Mass Spectrometry* **2024** (IF_{2023} 3.1) – DOI: 10.1021/jasms.4c00225
212. "On the critical competition between singlet exciton decay and free charge generation in non-fullerene based organic solar cells with low energetic offsets": Pranav, M.; Shukla, A.; Moser, D.; Rumeney, J.; Liu, W.; Wang, R.; Sun, B.; Smeets, S.; Tokmoldin, N.; Cao, Y.; He, G.; Beitz, T.; Jaiser, F.; Hultzsch, T.; Shoaee, S.; **Maes, W.**; Lüer, L.; Brabec, C.; Vandewal, K.; Andrienko, D.; Ludwigs, S.; Neher, D., *Energy Environ. Sci.* **2024**, *17*, 6676–6697 (IF_{2023} 32.4) – DOI: 10.1039/d4ee01409j
211. "Extracting structural data from MALDI-ToF mass spectrometry analysis of alternating conjugated polymers – A case study on PBTTT derivatives": Vanderspikken, J.; Verstappen, P.; **Maes, W.***, *Macromolecules* **2024**, *57*, 7138–7155 (IF_{2023} 5.1) – DOI: 10.1021/acs.macromol.4c00831
210. "Enhanced SWIR light detection in organic semiconductor photodetectors through up-conversion of mid-gap trap states": Zeiske, S.; Zarrabi, N.; Sandberg, O. J.; Gielen, S.; **Maes, W.**; Meredith, P.; Armin, A., *Adv. Mater.* **2024**, 2405061 (IF_{2023} 27.4) – DOI: 10.1002/adma.202405061
209. "Isomeric Modulation of Thermally Activated Delayed Fluorescence in Dibenzo[*a*,*c*]phenazine-based (Deep) Red Emitters": Brebels, S.; Cardeynaels, T.; Jackers, L.; Kuila, S.; Danos, A.; Monkman, A. P.; Champagne, B.; **Maes, W.***, *J. Mater. Chem. C* **2024**, *12*, 9255–9265 (IF_{2023} 5.7) – DOI: 10.1039/D4TC01214C
208. "Towards Sustainability in All-Printed Accumulation Mode Organic Electrochemical Transistors": Makhinia, A.; Bynens, L.; Goossens, A.; Deckers, J.; Lutsen, L.; Vandewal, K.; **Maes, W.**; Beni, V.; Ersman, P. A., *Adv. Funct. Mater.* **2024**, 2314857 (IF_{2023} 18.5) – DOI: 10.1002/adfm.202314857
207. "Earth Mover's Charge Transfer Distance: A General and Robust Approach for Describing Excited State Locality": Fraiponts, M.; **Maes, W.***; Champagne, B., *J. Chem. Theory Comput.* **2024**, *20*, 2751–2760 (IF_{2023} 5.7) – DOI: 10.1021/acs.jctc.3c01148
206. "Single-component organic solar cells – Perspective on the importance of chemical precision in conjugated block copolymers": Theunissen, D.; Smeets, S.; **Maes, W.***, *Front. Chem.* **2023**, *11*, 1326131 (IF_{2023} 3.8) – DOI: 10.3389/fchem.2023.1326131

205. "Intramolecular Locking and Coumarin Insertion: A Stepwise Approach for TADF Design": Paredis, S.; Cardeynaels, T.; Brebels, S.; Deckers, J.; Kuila, S.; Lathouwers, A.; Van Landeghem, M.; Vandewal, K.; Danos, A.; Monkman, A. P.; Champagne, B.; **Maes, W.***, *Phys. Chem. Chem. Phys.* **2023**, *25*, 29842–29849 (IF_{2022} 3.3) – DOI: 10.1039/d3cp03695b
204. "Exploring the High-Temperature Window of Operation for Organic Photovoltaics: a Combined Experimental and Simulations Study": Negash, A.; Hustings, J.; Robert, A.; Genene, Z.; Yilma, D.; Schreurs, D.; Mathijs, M.; Liesenborgs, J.; Van Reeth, F.; Vandewal, K.; Mammo, W.; Admassie, S.; **Maes, W.**; Manca, J. V., *Adv. Funct. Mater.* **2023**, 2308666 (IF_{2022} 19) – DOI: 10.1002/adfm.202308666
203. "A Tetrathienopyrrole-Based Ladder-Type Donor Polymer for High-Performance Organic Near-Infrared Cavity Detectors": Valkeneers, K.; Raymakers, J.; Liu, Q.; Vanderspikken, J.; Wang, Y.; Kesters, J.; Quill, T. J.; Liu, Z.; Van den Brande, N.; Lutsen, L.; Vandewal, K.; **Maes, W.***, *Mater. Horizons* **2023**, *10*, 5704–5711 (IF_{2022} 13.3) – DOI: 10.1039/D3MH01010D
202. "Structurally pure and reproducible polymer materials for high-performance organic solar cells": Smeets, S.; Liu, Q.; Vanderspikken, J.; Quill, T. J.; Gielen, S.; Lutsen, L.; Vandewal, K.; **Maes, W.***, *Chem. Mater.* **2023**, *35*, 8158–8169 (IF_{2022} 8.6) – DOI: 10.1021/acs.chemmater.3c01646
201. "On the importance of chemical precision in organic electronics: Fullerene intercalation in perfectly alternating conjugated polymers": Vanderspikken, J.; Liu, Z.; Wu, X.; Beckers, O.; Moro, S.; Quill, T. J.; Liu, Q.; Goossens, A.; Marks, A.; Weaver, K.; Hamid, M.; Goderis, B.; Nies, E.; Lemaur, V.; Beljonne, D.; Salleo, A.; Lutsen, L.; Vandewal, K.; Van Mele, B.; Costantini, G.; Van den Brande, N.; **Maes, W.***, *Adv. Funct. Mater.* **2023**, 2309403 (IF_{2022} 19) – DOI: 10.1002/adfm.202309403
200. "Photoexcitation energy deactivation in a solution of 10-phenyl-5,15-di-(4,6-dichloropyrimidinyl)-corrole at 77 K": Knyukshto, V. N.; Gladkov, L. L.; **Maes, W.**; Kruk, M. M., *J. Appl. Spectrosc.* **2023**, *90*, 507–514 (IF_{2022} 0.7) – DOI: 10.1007/s10812-023-01560-4
199. "Balanced Energy Gaps as a Key Design Rule for Solution-Phase Organic Room Temperature Phosphorescence": Paredis, S.; Cardeynaels, T.; Kuila, S.; Deckers, J.; Van Landeghem, M.; Vandewal, K.; Danos, A.; Monkman, A. P.; Champagne, B.; **Maes, W.***, *Chem. Eur. J.* **2023**, e202301369 (IF_{2022} 4.3) – DOI: 10.1002/chem.202301369
198. "Mid-gap Trap State Mediated Dark Current in Organic Photodiodes": Sandberg, O. J.; Kaiser, C.; Zeiske, S.; Zarrabi, N.; Gielen, S.; **Maes, W.**; Vandewal, K.; Meredith, P.; Armin, A., *Nat. Photon.* **2023**, *17*, 368–374 (IF_{2022} 35.0) – DOI: 10.1038/s41566-023-01173-5
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