

CV Wouter Van Gompel

Personal Information

Date of birth: 26th October 1992

Nationality: Belgian

Languages: Dutch, English, French

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Short CV

Wouter Van Gompel received his master's in chemistry at Ghent University in 2015 and his PhD in chemistry at Hasselt University in 2019 for the design, synthesis and characterization of hybrid perovskites with inorganic frameworks spanning the whole range of structural dimensionalities, from 3D to 0D, towards their use in optoelectronics. He was awarded a personal FWO-SB PhD grant by the Research Foundation Flanders to carry out this research. During his PhD, he was involved as a researcher in a European M-ERA.NET project with partners from Flanders (imec, UHasselt, Flamac) and Switzerland (CSEM, Solaronix). After his PhD, he continued to expand his research on hybrid perovskite at UHasselt, funded as a postdoctoral researcher on an FWO-SBO project with partners from imec, UHasselt, UGent, KULeuven, and UAntwerpen. He aided the project coordinator, dr. Laurence Lutsen (imec), with project management. On 01/10/2022, he was granted a BOF postdoctoral mandate at UHasselt. During his postdoc, he undertook research stays in Switzerland (EPFL, Prof. M.K. Nazeeruddin) and the UK (University of Cambridge, Prof. Sam Stranks). On 01/10/2023, he was appointed as Assistant Professor (Tenure Track) at UHasselt. He currently acts as supervisor for 3 PhD students at UHasselt and as co-supervisor for 1 PhD student at UHasselt and 1 PhD student at UGent (with supervisor Prof. Kristof Van Hecke). He has (co-)authored 20 publications, with 375 citations and a h-index of 10 (Google Scholar).

Education

- 2019** **Ph.D. degree in Chemistry**
Hasselt University, Belgium
- 2015** **Master's Degree in Chemistry** (greatest distinction)
Ghent University, Belgium
- 2013** **Bachelor's Degree in Chemistry** (great distinction)
Hasselt University, Belgium

Employment History

- 2023-** **Assistant professor (Tenure Track)**
Chemistry Department, Hasselt University, Belgium
- 2020-2023** **Postdoctoral Researcher**
Chemistry Department, Hasselt University, Belgium
- 2015-2019** **Ph.D. student**
Chemistry Department, Hasselt University, Belgium

Institutional Responsibilities

- 2022-** **Ombudsperson Master in Materiomics (UHasselt)**
- 2022-** **Member of the workgroup marketing for the Master in Materiomics (UHasselt)**
- 2021-** **Member of the Faculty Board of the Faculty of Sciences (UHasselt)**
- 2021-** **Member of the Board of the Chemistry Department (UHasselt)**

Awarded Grants and Fellowships

- 2023** **FWO senior postdoctoral fellowship**
Awarded for: 'Towards quasi-2D HYbrid PERovskites with enhanced stability and superior optoelectronic properties by tuning structural RIGIDity and intermolecular interactions (HYPERRIGID)' (1206424N). *Note: I did not take up this position as an FWO senior postdoc due to my appointment as an assistant professor (TT) before the start date of the grant.*
- 2023-2026** **FWO Senior Research Project (as co-supervisor)**
'Tailored crystals on-demand: gaining a full understanding of the crystallization of low-dimensional hybrid perovskites' (G0A8723N). Spokesperson: Prof. dr. Kristof Van Hecke (Ghent University); Supervisor for UHasselt: Prof. dr. Peter Adriaensens

- 2023 FWO grant for a long study visit abroad**
 ‘Study on the photophysics of novel 2D hybrid perovskites containing tailored organic cations’
 (V420123N)
 Host institution: University of Cambridge, UK
 Host: Prof. dr. Sam Stranks
- 2022-2023 BOF Postdoctoral grant (UHasselt)**
 ‘study on the INfluence of the sTructurE of the oRganic cation on key Properties of (quasi-)2D hybrid perovskites towards the rational design of Efficient and sTable optoElectronics (INTERPRETER)’
- 2021 FWO grant for a short study visit abroad**
 ‘Designed organic cations for use as interlayers in high-efficiency n-i-p perovskite solar cells’
 (K221920N)
 Host institution: École Polytechnique Fédérale de Lausanne, Switzerland
 Host: Prof. dr. M.K. Nazeeruddin
- 2015-2019 FWO Ph.D. Fellowship strategic basic research**
 ‘Ion substitution in hybrid perovskites: enhancing environmental stability and band gap tuning’
 (1S17516N)

Supervision of Ph.D. Researchers

- 2023- As supervisor (expected graduation year between brackets):**
 Aleksandra Ciesielska (2027), PhD student at Hasselt University in Belgium
 Robin Erkens (2027), PhD student at Hasselt University in Belgium
 Ediz Garip (2027), PhD student at Hasselt University in Belgium
- 2023- As co-supervisor (expected graduation year between brackets):**
 Stijn Lenaers (2024), PhD student at Hasselt University in Belgium
 Paola La Magna (2027), PhD student at Ghent University in Belgium

Teaching Activities

- 2023- Coordinator “Fundamentals of materials chemistry” (5 ECTS), Master in Materiomics**
- 2023- Co-lecturer “Hybrid Materials & Functional Interfaces” (3 ECTS), Master in Materiomics**
- 2022-2023 Co-lecturer “Fundamentals of materials chemistry” (5 ECTS), Master in Materiomics**
- 2021- Co-lecturer “Introduction to Chemistry” (5 ECTS), 2nd Bachelor in Physics**
- 2021- Co-lecturer “Biomolecules” (7 ECTS), 1st Bachelor in Biomedical Sciences**

Prizes and Awards

- 2023** Best poster prize award at the 6th International Conference on Perovskite Solar Cells and Optoelectronics (PSCO-2023), Oxford, UK, 18th-20th September
- 2019** Best poster prize award at the nanoGe Fall Meeting 2019 for the PERFuDe19 symposium, Berlin, Germany, 4th-9th November
- 2015** “Dow Chemicals Company Award” for best student and best thesis as a Master of Science in Chemistry at Ghent University for the graduation year 2015

Peer-Reviewed Publications

20. “Elucidating the Non-Covalent Interactions that Trigger Interdigitation in Lead-Halide Layered Hybrid Perovskites”: Maufort, A.; Cerdá, J.; Van Hecke, K.; Deduytsche, D.; Verding, A.; Ruttens, B.; Li, W.; Detavernier, C.; Lutsen, L.; Quarti, C.; Vanderzande, D.; Beljonne, D.; **Van Gompel, W.T.M.**, *ACS Inorganic Chemistry*, **2024**, DOI: 10.1021/acs.inorgchem.3c04536 (IF₂₀₂₂: 4.6)
19. “Surface Modulation via Conjugated Bithiophene Ammonium Salt for Efficient Inverted Perovskite Solar Cells”: Zhang, X.; Eurelings, S.; Brancesco, A.; Song, W.; Lenaers, S.; **Van Gompel, W.T.M.**; Krishna, A.; Aernouts, T.; Lutsen, L.; Vanderzande, D.; Creatore, M.; Zhan, Y.; Kuang, Y.; Poortmans, J., *ACS Applied Materials & Interfaces*, **2023**, 15, 40, 46803–46811 (IF₂₀₂₂: 10.383)
18. “Tailoring Interlayer Charge Transfer Dynamics in 2D Perovskites with Electroactive Spacer Molecules”: Boeije, Y.; **Van Gompel, W. T. M.**; Zhang, Y.; Ghosh, P.; Zelewski, S.; Maufort, A.; Roose, B.; Ying Ooi, Z.; Chowdhury, R.; Devroey, I.; Lenaers, S.; Tew, A.; Dai, L.; Dey, K.; Salway, H.; Friend, R. H.; Siringhaus, H.; Lutsen, L.; Vanderzande, D.; Rao, A.; Stranks, S. D., *Journal of the American Chemical Society*, **2023**, 145, 39, 21330-21343 (IF₂₀₂₂: 16.383)
17. “2D and quasi-2D hybrid perovskites containing organic cations with an extended conjugated system: opportunities and challenges”: **Van Gompel, W.T.M.**; Lutsen, Laurence; Vanderzande, Dirk, *J. Mat Chem. C*, **2023**, 11, 12877-12893 (IF₂₀₂₂: 8.067)

16. "3D Perovskite Passivation with a Benzotriazole-Based 2D Interlayer for High-Efficiency Solar Cells": Caiazza, A.; Maufort, A.; van Gorkom, B.T.; Remmerswaal, W.H. M.; Ferrer Orri, J.; Li, J.; Wang, J.; **Van Gompel, W.T.M.**; Van Hecke, K.; Kusch, G.; Oliver, R. A.; Ducati, C.; Lutsen, L.; Wienk, M.W.; Stranks, S.D.; Vanderzande, D.; Janssen, R.A.J., *ACS Appl. Energy Mater.*, **2023**, 6, 7, 3933–3943 (IF₂₀₂₂ 6.959)
15. "Organic ammonium iodide salts as passivation for buried interface enables efficient and stable NiOx based p-i-n perovskite solar cells": Lammar, S.; **Van Gompel, W.T.M.**; Lenaers, S.; Mertens, M.; Hans-Gerd, B.; Desta, D.; Hadipour, A.; Lutsen, L.; Vanderzande, D.; Krishna, A.; Abdulraheem, Y.; Aernouts, T.; Poortmans, J., *Journal of Materials Chemistry C*, **2023**, 11, 8146-8153 (IF₂₀₂₁ 8.067)
14. "Quasi-2D Hybrid Perovskite Formation Using Benzothieno[3,2-b]Benzothiophene (BTBT) Ammonium Cations: Substantial Cesium Lead(II) Iodide Black Phase Stabilization": Denis, P.-H.; Mertens, M.; **Van Gompel, W.T.M.**; Maufort, M.; Mertens, S.; Wei, Z.; Van Landeghem, M.; Gielen, S.; Ruttens, B.; Deduytsche, D.; Detavernier, C.; Lutsen, L.; Grozema, F.; Vandewal, K.; Vanderzande, D., *Advanced Optical Materials* **2022**, 10, 18, 2200788 (IF₂₀₂₁ 10.05)
13. "Tin-lead-metal halide perovskite solar cells with enhanced crystallinity and efficiency by addition of fluorinated long organic cation": Pitaro, M.; Pau, R.; Duim, H.; Mertens, M.; **Van Gompel, W.T.M.**; Portale, G.; Lutsen, L.; Loi, M. A., *Applied Physics Reviews* **2022**, 9, 021407 (IF₂₀₂₁ 19.162)
12. "Light-Induced Charge Transfer in Two-Dimensional Hybrid Lead Halide Perovskites": Van Landeghem, M.; **Van Gompel, W.T.M.**; Herckens, R.; Lutsen, L.; Vanderzande, D.; Van Doorslaer, S.; Goovaerts, E., *The Journal of Physical Chemistry C* **2021**, 125, 33, 18317-18327 (IF₂₀₂₁ 4.126)
11. "Directing the Self-Assembly of Conjugated Organic Ammonium Cations in Low-Dimensional Perovskites by Halide Substitution": Denis, P.-H.; Mertens, M.; **Van Gompel, W.T.M.**; Van Hecke, K.; Ruttens, B.; D'Haen, J.; Lutsen, L.; Vanderzande, D., *Chemistry of Materials* **2021**, 33, 13, 5177-5188 (IF₂₀₂₁ 9.811)
10. "Study on the dynamics of phase formation and degradation of 2D layered hybrid perovskites and low-dimensional hybrids containing mono-functionalized oligothiophene cations": **Van Gompel, W.T.M.**; Herckens, R.; Mertens, M.; Denis, P.-H.; Ruttens, B.; D'Haen, J.; Van Hecke, K.; Lutsen, L.; Vanderzande, D., *ChemNanoMat* **2021**, 7, 9, 1013-1019 (IF₂₀₂₁ 3.820)
9. "2D layered perovskite containing functionalised benzothieno-benzothiophene molecules: formation, degradation, optical properties and photoconductivity": **Van Gompel, W.T.M.**; Herckens, R.; Denis, P.-H.; Mertens, M.; Gélvez-Rueda, M.C.; Van Hecke, K.; Ruttens, B.; D'Haen, J.; Grozema, F.; Lutsen, L.; Vanderzande, D., *Journal of Materials Chemistry C* **2020**, 8, 7181-7188 (IF₂₀₂₀ 7.393)
8. "Inducing charge separation in solid-state two-dimensional hybrid perovskites through the incorporation of organic charge-transfer complexes": Gélvez-Rueda, M.C.; **Van Gompel, W.T.M.**; Herckens, R.; Lutsen, L.; Vanderzande, D.; Grozema, F., *The journal of physical chemistry letters* **2020**, 11, 3, 824-830 (IF₂₀₂₀ 6.475)
7. "Lead-halide perovskites meet donor-acceptor charge-transfer complexes": Marchal, N.; **Van Gompel, W.T.M.**; Gélvez-Rueda, M.; Vandewal, K.; Van Hecke, K.; Boyen, H.-G.; Conings, B.; Herckens, R.; Maheshwari, S.; Lutsen, L.; Quarti, C.; Grozema, F.; Vanderzande, D.; Beljonne, D., *Chemistry of Materials* **2019**, 31, 17, 6880–6888 (IF₂₀₁₉ 9.567)
6. "Towards 2D layered hybrid perovskites with enhanced functionality: introducing charge-transfer complexes via self-assembly": **Van Gompel, W.T.M.**; Herckens, R.; Van Hecke, K.; Ruttens, B.; D'Haen, J.; Lutsen, L.; Vanderzande, D., *Chemical Communications* **2019**, 55, 2481-2484 (IF₂₀₁₉ 5.996)
5. "Low-dimensional hybrid perovskites containing an organic cation with an extended conjugated system: tuning the excitonic absorption features": **Van Gompel, W.T.M.**; Herckens, R.; Van Hecke, K.; Ruttens, B.; D'Haen, J.; Lutsen, L.; Vanderzande, D., *ChemNanoMat* **2018**, 5, 3, 323-327 (IF₂₀₁₈ 3.431)
4. "Multi-layered hybrid perovskites templated with carbazole derivatives: optical properties, enhanced moisture stability and solar cell characteristics": Herckens, R.; **Van Gompel, W.T.M.**; Song, W.; G.-R., M.C.; Maufort, A.; Ruttens, B.; D'Haen, J.; Grozema, F.; Aernouts, T.; Lutsen, L.; Vanderzande, D., *Journal of Materials Chemistry A* **2018**, 6, 45, 22899-22908 (IF₂₀₁₈ 10.81)
3. "Degradation of the Formamidinium Cation and the Quantification of the Formamidinium–Methylammonium Ratio in Lead Iodide Hybrid Perovskites by Nuclear Magnetic Resonance Spectroscopy": **Van Gompel, W.T.M.**; Herckens, R.; Reekmans, G.; Ruttens, B.; D'Haen, J.; Adriaensens, P.; Lutsen, L.; Vanderzande, D., *The Journal of Physical Chemistry C* **2018**, 122, 8, 4117–4124 (IF₂₀₁₈ 4.43)
2. "Aqueous solution–gel precursors for LiFePO₄ lithium ion battery cathodes, their decomposition and phase formation": Vranken, T.; **Van Gompel, W.T.M.**; D'Haen, J.; Van Bael, M.K.; Hardy, A., *Journal of Sol-Gel Science and Technology* **2017**, 84, 198–205 (IF₂₀₁₇ 1.745)
1. "Titania Nanocrystal Surface Functionalization Through Silane Chemistry for Low Temperature Deposition on Polymers": Watté, J.; **Van Gompel, W.T.M.**; Lommens, P.; De Buysser, K.; Van Driessche, I., *ACS Applied Materials & Interfaces* **2016**, 8, 43, 29759–29769 (IF₂₀₁₆ 7.504)

Oral Contributions to International Conferences

- 2024** **MATSUS 2024** ([Barcelona, Spain](#))
Tailored Spacer Cations for Interlayer Charge Transfer in 2D Hybrid Perovskites
- 2023** **MATSUS 2023** ([Valencia, Spain](#))
A Conjugated Rigid Organic Cation for HOIPs with Enhanced Stability and Optoelectronic Properties
- 2022** **ICSM 2022** ([Glasgow, UK](#))
Low Dimensional Organic-Inorganic Hybrid Perovskites containing Organic Chromophores and Organic Charge Transfer Complexes
- 2022** **Next-Generation V + PV Materials** ([Groningen, The Netherlands](#))
Enhancing the stability of hybrid perovskites using a polyheterocyclic aromatic ammonium cation
- 2022** **SPIE Photonics Europe** ([Strasbourg, France](#))
Functional organic cations in low-dimensional hybrid organic-inorganic perovskites: charge transfer processes
- 2021** **MRS Fall Meeting 2021** ([online](#))
A Study on the Phase Formation Behavior of 2D Layered Perovskites and Low-Dimensional Hybrids Containing Oligothiophene Derivatives
- 2021** **ACS Fall 2021** ([online](#))
Low-dimensional functionalized hybrid inorganic-organic perovskites: A new class of versatile semiconductors for optoelectronic applications?
- 2021** **13th Conference on Hybrid and Organic Photovoltaics (HOPV21)** ([online](#))
The Dynamics of Phase Formation and Degradation of 2D Layered Hybrid Perovskites and Low-dimensional Hybrids Containing Mono-functionalized Oligothiophene Cations
- 2020** **nanoGe Fall Meeting 2020 (OnlineNFM20)** ([online](#))
2D layered perovskite containing functionalised benzothieno-benzothiophene molecules: formation, degradation, optical properties and photoconductivity
- 2019** **nanoGe Fall Meeting 2019** (Berlin, Germany)
Towards a Functional Organic Layer for Low-Dimensional Hybrids
- 2019** **International Conference on Organic Electronics (ICOE) 2019** (Hasselt, Belgium)
Functional low-dimensional hybrid perovskites through the incorporation of charge-transfer complexes
- 2019** **E-MRS Spring Meeting 2019** (Nice, France)
Extending the functionality of low-dimensional hybrid perovskites through the incorporation of charge-transfer complexes