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## Low-dimensional solution-processable electronics

Talsma, Wytse

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# Curriculum Vitae

Wytse Talsma

5 May 1990                      Born in Groningen, The Netherlands

## Education

03/2016 - 10/2019              University of Groningen, The Netherlands  
Zernike Institute for Advanced Materials  
Ph.D. research in the Photophysics and OptoElectronics  
group  
under the supervision of Prof. M. A. Loi.  
Part of CogniGron

09/2013 - 07/2015              University of Groningen, The Netherlands  
Top Master programme in Nanoscience  
Research project: *“Electric Transport in Magnetic Ionic Liquid  
Gated Materials”*

09/2009 - 07/2013              University of Groningen, The Netherlands  
Bachelor Applied Physics  
Research project: *“Using metal enhanced fluorescence for im-  
proving the detection of organic molecules”*

## Conference contributions

1. "Exploiting hysteresis effects in polymer wrapped single-walled carbon nanotubes for neuromorphic applications", The Zernike Institute Vlieland Conference. *May 19-21, 2019, Vlieland, The Netherlands.*
2. "High quality s-SWCNT inks for highly reproducible field-effect transistors", Physics@Veldhoven NWO Conference. *January 25-26, 2019, Veldhoven, The Netherlands.*
3. "High quality s-SWCNT inks for highly reproducible field-effect transistors", NT18 International Nanotube conference. *July 15-20, 2018, Beijing, China.*
4. "Controlling the Polarity of Network s-SWCNT Field Effect Transistors", Physics@Veldhoven NWO Conference. *January 23-24, 2018, Veldhoven, The Netherlands.*
5. "On-Chip Chemical Self-Assembly of Semiconducting Single-Walled Carbon Nanotubes (SWNTs): Toward Robust and Scale Invariant SWNTs Transistors", The Zernike Institute Vlieland Conference. *May 7-9, 2017, Vlieland, The Netherlands.*
6. "Highly stable s-SWCNT field effect transistors top-gated with high-k dielectric", Physics@Veldhoven NWO Conference. *January 17-18, 2017, Veldhoven, The Netherlands.*

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## List of publications

1. **Polar Side Chains Enhanced Selection of Semiconducting Single-Walled Carbon Nanotubes by Polymer Wrapping**  
G. Ye, **W. Talsma**, K. Tran, Y. Liu, S. Dijkstra, J. Cao, J. Chen, J. Qu, M. A. Loi, R. C. Chiechi  
*submitted*
2. **Efficient Selective Sorting of Semiconducting Carbon Nanotubes Using Ultranarrow Bandgap Polymers** [Chapter 3]  
**W. Talsma**, G. Ye, Y. Liu, H. Duim, S. Dijkstra, K. Tran, J. Qu, J. Song, R. C. Chiechi, M. A. Loi  
*submitted*
3. **Heterostructure of PbS Quantum Dots and Carbon Nanotubes for High Efficiency NIR Light-Emitting Field-Effect Transistors**  
D. Bederak, A. G. Shulga, S. Kahmann, **W. Talsma**, J. Pelanskis, D. N. Dirin, M. V. Kovalenko, M. A. Loi  
*submitted*
4. **Field effect transistors based on formamidinium tin triiodide perovskite** [Chapter 4]  
S. Shao, **W. Talsma**, M. Pitaro, J. Dong, S. Kahmann, A. J. Rommens, G. Portale, M. A. Loi  
*Adv. Funct. Mater.*, 2008478 (2021) [doi: 10.1002/adfm.202008478]
5. **Synaptic plasticity in semiconducting single-walled carbon nanotubes transistors** [Chapter 5]  
**W. Talsma**, H. van Loo, S. Shao, S. Jung, S. Allard, U. Scherf, M. A. Loi  
*Adv. Intell. Syst.*, 2, 2000154 (2020) [doi: 10.1002/aisy.202000154]

6. **Customizing the Polarity of Single-Walled Carbon-Nanotube Field-Effect Transistors Using Solution-Based Additives**  
J. M. Salazar-Rios, A. A. Sengrian, **W. Talsma**, H. Duim, M. Abdu-Aguye, S. Jung, N. Fröhlich, S. Allard, U. Scherf, M. A. Loi  
*Adv. Electron. Mater.*, 6, 1900789 (2020) [doi: 10.1002/aelm.201900789]
7. **Real-Time Monitoring of Cellular Cultures with Electrolyte-Gated Carbon Nanotube Transistors**  
F. Scuratti, G. E. Bonacchini, C. Bossio, J. M. Salazar-Rios, **W. Talsma**, M. A. Loi, M. R. Antognazza, M. Caironi  
*ACS Appl. Mater. Interfaces*, 11 (41), 37966–37972 (2019) [doi: 10.1021/ac-sami.9b11383]
8. **Remarkably Stable, High-Quality Semiconducting Single-Walled Carbon Nanotube Inks for Highly Reproducible Field-Effect Transistors** [Chapter 2]  
**W. Talsma**, A. A. Sengrian, J. M. Salazar-Rios, H. Duim, M. Abdu-Aguye, S. Jung, S. Allard, U. Scherf, M. A. Loi  
*Adv. Electron. Mater.* 5(8), 1900288 (2019) [doi: 10.1002/aelm.201900288]
9. **Enhancing Molecular n-Type Doping of Donor-Acceptor Copolymers by Tailoring Side Chains**  
J. Liu, L. Qiu, R. Alessandri, X. Qiu, G. Portale J. Dong, **W. Talsma**, G. Ye, A. A. Sengrian, P. C. T. Souza, M. A. Loi, R. C. Chiechi, S. J. Marrink, J. C. Hummelen, L. J. A. Koster  
*Adv. Mater.* 30, 1704630 (2018) [doi: 10.1002/adma.201704630]
10. **Understanding the Selection Mechanism of the Polymer Wrapping Technique toward Semiconducting Carbon Nanotubes**  
J. M. Salazar-Rios, **W. Talsma**, V. Derenskyi, W. Gomulya, T. Keller, M. Fritsch, S. Kowalski, E. Preis, M. Wang, S. Allard, G. C. Bazan, U. Scherf, M. C. dos Santos, M. A. Loi  
*Small Methods* 2, 1700335 (2018) [doi: 10.1002/smtd.201700335]
11. **Inducing ferromagnetism and Kondo effect in platinum by paramagnetic ionic gating**  
L. Liang, Q. Chen, J. Lu, **W. Talsma**, J. Shan, G. R. Blake, T. T. M. Palstra, J. Ye  
*Science Advances* 4 (4), eaar2030 (2018) [doi: 10.1126/sciadv.aar2030]

12. **On-Chip Chemical Self-Assembly of Semiconducting Single-Walled Carbon Nanotubes (SWNTs): Toward Robust and Scale Invariant SWNTs Transistors**

V. Derenskiy, W. Gomulya, **W. Talsma**, J. M. Salazar-Rios, M. Fritsch, P. Nir-malraj, H. Riel S. Allard, U. Scherf, M. A. Loi

*Adv. Mater.* **29**, 1606757 (2017) [doi: 10.1002/adma.201606757]

