LIST OF PUBLICATIONS, PRESENTATIONS, SUPERVISED STUDENTS
(AS PER DEC. 2021)

UNDER REVIEW

i. Picosecond Optomagnetic Tunnel Junctions
L. Wang, H. Cheng, P. Li, Y. Liu, Y.L.W. van Hees, R. Lavrijsen, X. Lin, K. Cao, B. Koopmans, W. Zhao
Under review at PNAS (2021)

ii. Local control of magnetic interface effects in chiral Ir|Co|Pt multilayers using Ga+ ion irradiation
M.C.H. de Jong, M.J. Meijer, J. Lucassen, Jvan Liempt, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
Under review at Physical Review B (2021)

PUBLICATIONS
FIRST-AUTHOR AND/OR LAST-AUTHOR

1. Stabilizing chiral spin-structures via an alternating Dzyaloshinskii-Moriya interaction
J. Lucassen, M.J. Meijer, M.C.H. de Jong, R.A. Duine, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
Physical Review B 102, 014451 (2020)

2. Deterministic single pulse all-optical magnetization writing facilitated by non-local transfer of spin angular momentum
Y.L.W. van Hees, P. van de Meugheuvel, B. Koopmans, R. Lavrijsen
Nature Communications 11, 3835 (2020)

3. Magnetic chirality controlled by the interlayer exchange interaction
M.J. Meijer, J. Lucassen, F. Kloodt-Twesten, R. Frompter, O. Kurnosikov, R.A. Duine, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
Physical Review Letters 124, 207203 (2019)

4. Extraction of Dzyaloshinskii-Moriya interaction from propagating spin waves validated
J. Lucassen, C.F. Schippers, M.A. Verheijen, P. Fritsch, E.J. Geluk, B. Barcones, R.A. Duine, S. Wurmehl, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
Physical Review B 101, 064432 (2020)

5. Tuning magnetic chirality by dipolar interactions
J. Lucassen, M.J. Meijer, F. Kloodt-Twesten, R. Frömter, O. Kurnosikov, R.A. Duine, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
Physical Review Letters 123, 157201 (2019)

6. Creep of Chiral Domain Walls
D.M.F. Hartmann, R.A. Duine, M.J. Meijer, H.J.M. Swagten, R. Lavrijsen
Physical Review B 100, 094417 (2019)

7. A new twist for spin torques in antiferromagnets
R. Lavrijsen
Nature Electronics 2, 372-373 (2019)
8. Optimizing propagating spin wave spectroscopy
   J. Lucassen, C.F. Schippers, L. Rutten, R.A. Duine, H.J.M. Swagten, B. Koopmans, R. Lavrijsen
   Applied Physics Letters 115, 012403 (2019)

9. Scanning electron microscopy with polarization analysis for multi-layered chiral spin textures
   J. Lucassen, F. Kloodt-Twesten, R. Frompter, H.P. Oepen, R.A. Duine, H. J. M. Swagten, B. Koopmans, R. Lavrijsen
   Applied Physics Letters 111, 132403 (2017)

10. Periodically modulated ferromagnetic waveguide claddings with perpendicular magnetic anisotropy for enhanced mode conversion
    Y.L.W. van Hees, J.J.G.M. van der Tol, B. Koopmans, R. Lavrijsen
    IEEE Photonics Proceedings (2017)

11. Asymmetric magnetic bubble expansion under in-plane field in Pt/Co/Pt: Effect of interface engineering
    R. Lavrijsen, D.M.F. Harmann, A. van den Brink, Y. Yin, M. Verheijen, B. Barcones, R.A. Duine, H. J. M. Swagten, B. Koopmans
    Physical Review B 91, 104414 (2015)

12. Multi-bit operations in vertical spintronic shift registers
    R. Lavrijsen, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
    Nanotechnology 25, 105201 (2014)

13. Magnetic ratchet for 3-dimensional spintronics memory and logic
    R. Lavrijsen, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
    Nature 494, 647-650 (2013)

14. Asymmetric Pt/Co/Pt-stack induced sign-control of current-induced magnetic domain-wall creep
    R. Lavrijsen, P.P.J. Haazen, E. Mure, J.H. Franken, J.T. Kohlhepp, H.J.M. Swagten and B. Koopmans
    Applied Physics Letters, 100, 262408 (2012)

15. Tuning the RKKY-interlayer exchange coupling between single perpendicularly magnetized CoFeB layers
    R. Lavrijsen, A. Fernandez-Pacheco, D. Petit, R. Mansell, J.H. Lee, R.P. Cowburn
    Applied Physics Letters, 100, 052411 (2012)

16. Magnetism in Co_{80-x}Fe_{x}B_{20}: effect of crystallization
    R. Lavrijsen, P.V. Paluskar, C.T.J. Loermans, P.A. van Kruisbergen, J.T. Kohlhepp, H.J.M. Swagten and B. Koopmans
    Journal of Applied Physics, 109, 093905 (2011)

17. Enhanced –field driven domain-wall motion in Pt/Co_{80}B_{12}/Pt strips
    R. Lavrijsen, J.T. Kohlhepp, H.J.M. Swagten and B. Koopmans.
    Applied Physics Letters, 98, 132502 (2011)

18. Fe:O:C grown by focused-electron-beam-induced deposition: magnetic and electric properties
    R. Lavrijsen, R. Cordoba, F. J. Schoenaker, T. Ellis, B. Barcones-Campo, J.T. Kohlhepp, H.J.M. Swagten, B. Koopmans, J.M. De Teresa, C. Magen, M.R. Ibarra, P. Trompenaars and J.J.L. Mulders.
    Nanotechnology, 22, 025302 (2011).

19. Controlled domain wall injection in perpendicularly magnetized strips
    R. Lavrijsen, J.H. Franken, J. T. Kohlhepp, H. J. M. Swagten, B. Koopmans
    Applied Physics Letters 96, 222502 (2010)
20. Reduced domain wall pinning in ultrathin Pt/Co$_{100-x}$B$_x$/Pt with perpendicular magnetic anisotropy
   R. Lavrijsen, G. Malinowski, J.H. Franken, J. T. Kohlhepp, H. J. M. Swagten, B. Koopmans, M. Czapkiewicz, T. Stobiecki
   *Applied Physics Letters 96, 022501 (2010)*

**Co-Author**

21. Ultra-low energy threshold engineering for all-optical switching of magnetization in dielectric-coated Co/Gd based synthetic-ferrimagnet
   P. Li, M.J.G. Peeters, Y.L.W. Hees, R. Lavrijsen, B. Koopmans
   *Accepted at Applied Physics Letters as Editors Pick (December 2021)*

22. An investigation of the interface and bulk contributions to the magneto-optic activity in Co/Pt multi-layered thin films
   F.E. Demirer, R. Lavrijsen, B. Koopmans
   *Journal of Applied Physics 129, 163904 (2021)*

23. Accurate extraction of anisotropic spin-orbit torques from harmonic measurements
   D.M.J. van Elst, M.R.A. Peters, F. Buttner, A. Wittmann, E.A. Tremsina, C.O. Avci, R. Lavrijsen, H.J.M. Swagten and G.S.D. Beach
   *Applied Physics Letters 118, 172403 (2021)*

24. Chiral Spin Spirals at the Surface of the van der Waals Ferromagnet Fe$_3$GeTe$_2$
   M.J. Meijer, J. Lucassen, R.A. Duine, H.J.M. Swagten, B. Koopmans, R. Lavrijsen, M.H.D. Guimaraes
   *NanoLetters 20 (12), 8563-8568 (2020)*

25. Design and modelling of a novel integrated photonic device for nano-scale magnetic memory reading
   E.F. Demirer, C. van der Boomen, J. van der Tol, B. Koopmans, R. Lavrijsen
   *MDPI, Applied Physics (2020)*

26. Dynamics of all-optically switched magnetic domains in Co/Gd heterostructures with Dzyaloshinskii-Moriya interaction
   A. Cao, Y.L.W. van Hees, R. Lavrijsen, W. Zhao, B. Koopmans
   *Physical Review B 102, 104412 (2020)*

27. Enhanced all-optical switching and domain wall velocity in annealed synthetic-ferrimagnetic multilayers
   L. Wang, Y.L.W. van Hees, R. Lavrijsen, W. Zhao, B. Koopmans
   *Applied Physics Letters 117, 022408 (2020)*

28. Magnetic domain wall curvature induced by wire edge pinning
   L. Herrera Diaz, F. Ummelen, V. Jeudy, G. Durin, R. Diaz-Pardo, A. Casiraghi, G. Agnus, D. Bouville, J. Langer, B. Ocker, R. Lavrijsen, H.J.M. Swagten, D. Ravelosona
   *Applied Physics Letters 117, 062406 (2020)*

29. Structural transitions of skyrmion lattices in synthetic antiferromagnets
   E. van Walsum, R.A. Duine, J. Lucassen, R. Lavrijsen, H.J.M. Swagten,
   *Physical Review B 100, 064402 (2019)*

30. Long-range chiral exchange interaction in synthetic antiferromagnets
   D.S. Han, K. Lee, J.P. Hanke, K.W. Kim, Y. Mokrousov, W. Yoo, Y. van Hees, T.W. Kim, R. Lavrijsen, C.Y. You, H.J.M. Swagten, M.H. Jung, M. Klaeui
   *Nature Materials 18, 703-709 (2019)*
31. **Investigating optically excited terahertz standing spin waves using noncollinear magnetic bilayers**
   M.L.M. Lalieu, R. Lavrijsen, R.A. Duine, B. Koopmans
   *Physical Review B* **99**, 184439 (2019)

32. **Boosting the Performance of WO3/n-Si Heterostructures for Photo-electrochemical Water Splitting: from the Role of Si to Interface Engineering**
   Y. Zhao, G. Brocks, H. Genuit, R. Lavrijsen, M.A. Verheijen, A. Bieberle-Huetter
   *Advanced Energy Materials* **4**, 9262–9270 (2019)

33. **Electrochemistry of Sputtered Hematite Photoanodes: A Comparison of Metallic DC versus Reactive RF Sputtering**
   R. Sinha, R. Lavrijsen, M.A. Verheijen, E. Zoethout, H. Genuit, M.C.M. van de Sanden, A. Bieberle-Huetter
   *ACS Omega* **4**, 9262-9270 (2019)

34. **Integrating all-optical switching with spintronics**
   M.L.M. Lalieu, R. Lavrijsen, B. Koopmans
   *Nature Communications* **10**, 110 (2019)

35. **Physical and chemical defects in WO₃ thin films and their impact on photoelectrochemical water splitting**
   Y. Zhao, S. Balasubramanyam, R. Sinha, R. Lavrijsen, M.A. Verheijen, A.A. Bol, A. Bieberle-Huetter
   *ACS Applied Energy Materials* **1**, 5887-5895 (2018)

36. **Plasma radiation studies in Magnum-PSI using resistive bolometry**
   G.G. van Eden, M.L. Reinke, S. Brons, G. van der Bijl, R. Lavrijsen, S.P. Huber, R. Perillo, M.C.M. van de Sanden, T.W. Morgan
   *Nuclear Fusion* **58**, 106006 (2018)

37. **Fabrication of Scaffold-Based 3D Magnetic Nanowires for Domain Wall Applications**
   D. Sanz-Hernandez, R.F. Hamans, J. Osterrieth, J.W. Liao, L. Skoric, J.D. Fowlkes, P.D. Rack, A. Lippert, S.F. Lee, R. Lavrijsen, A. Fernandez-Pacheco
   *Nanomaterials* **8-7**, 483 (2018)

38. **Versatile microfluidic flow generated by moulded magnetic artificial cilia.**
   S.Z. Zhang, Y. Wang, R. Lavrijsen, P.R. Onck, J.M.J. den Toonder
   *Sensors and Actuators B – Chemical* (2017)

39. **Chiral Magnetoresistance in Pt/Co/Pt zigzag wires**
   Y.X. Yin, D.S. Han, J.S. Kim, R. Lavrijsen, K.J. Lee, S.W. Lee, K.W. Kim, H.W. Lee, H.J.M. Swagten, B. Koopmans
   *Applied Physics Letters* **112**, 249901 (2018)

40. **Synthesis of Ni Nanoparticles with Controllable Magnetic Properties by Atmospheric Pressure Microplasma Assisted Process**
   L. Liu, S. Li, S.A. Starostin, R. Lavrijsen, W. Wang, V. Hessel
   *American Society of Chemical Engineers (AIChE)* (2017)

41. **Deterministic all-optical switching of synthetic ferrimagnets using single femtosecond laser pulses**
42. Sputter grown Fe and Cr/Fe multilayers with fourfold magnetic anisotropy on GaAs, R.H. Mansell, D.C.M.C. Petit, A. Fernandez-Pacheco, R. Lavrijsen, J.H. Lee, R.P. Cowburn
   IEEE transactions on magnetics, 54, 2000105 (2018)

43. Thickness dependence of unidirectional spin-Hall magnetoresistance in metallic bilayers
   Y.Yin, D.-S. Han, M.C.H. de Jong, R. Lavrijsen, R.A. Duine, H.J.M. Swagten, Bert Koopmans
   Applied Physics Letters, 111, 232405 (2017)

44. Fabrication, Detection, and Operation of a Three-Dimensional Nanomagnetic Conduit, D. Sanz-Hernández, R.F. Hamans, J.-W. Liao, A. Welbourne, R. Lavrijsen, and Amalio Fernández-Pacheco
   ACS Nano (2017)

45. Visible-light-promoted gas-phase water splitting using porous WO3/BiVO4 photoanodes
   T. Stoll, G. Zafeiropoulos, I. Dogan, H. Genuit, R. Lavrijsen, B. Koopmans, M.N. Tsampas
   Electrochemistry Communications 82, 47-51 (2017)

46. Nanostructuring of iron thin films by high flux low energy helium plasma
   A. Bieberle-Hutter, I. Tanyeli, R. Lavrijsen, B. Koopmans, R. Sinha, M.C.M. van de Sanden
   Thin Solid Films 631, 50-56 (2017)

47. Vector magnetometry of Fe/Cr/Fe trilayers with biquadratic coupling
   R. Mansell, D.C.M.C. Petit, A. Fernandez-Pacheco, J.H. Lee, S.L. Chin, R. Lavrijsen, R.P. Cowburn
   Journal of Physics D-Applied Physics 50, 19LT02 (2017)

48. Zigzag Domain Wall Mediated Reversal in Antiferromagnetically Coupled Layers
   R. Mansell, A. Fernandez-Pacheco, D.C.M.C. Petit, N.J. Steinke, J.H. Lee, R. Lavrijsen, R.P. Cowburn
   IEEE Magnetics Letters 8, 4102304 (2017)

49. Chiral Magnetoresistance in Pt/Co/Pt zigzag wires
   Y. Yin, D-S. Han, J-S. Kim, R. Lavrijsen, K-J. Lee, S-W. Lee, K-W. Kim, H-W. Lee, H.J.M. Swagten, B. Koopmans
   Applied Physics Letters 110, 122401 (2017)

50. Systematic layer-by-layer characterisation of multilayers for three-dimensional data storage and logic
   D. Petit, R. Lavrijsen, J. H. Lee, R. Mansell, A. Fernandez-Pacheco, R. P. Cowburn
   Nanotechnology 27, 155203 (2016)

51. Thickness dependence of the interfacial Dzyaloshinskii-Moriya interaction in inversion symmetry broken systems
   J. Cho, N-H. Kim, S. Lee, J-S. Kim, R. Lavrijsen, A. Solignac, Y. Yin, D-S. Han, N. J. J. van Hoof, H. J. M. Swagten, B. Koopmans, C-Y. You
   Nature Communications 6, 7635 (2015)

52. A robust soliton ratchet using combined antiferromagnetic and ferromagnetic interlayer couplings
R. Mansell, R. Lavrijsen, A. Fernandez-Pacheco, D. C. M. C. Petit, J. H. Lee, B. Koopmans, H. J. M. Swagten, R. P. Cowburn

*Applied Physics Letters* **106**, 092404 (2015)

53. Magnetic properties and interlayer coupling of epitaxial Co/Cu films on Si  
R. Mansell, D. Petit, A. Fernandez-Pacheco, R. Lavrijsen, J.H. Lee, R. P. Cowburn

*Journal of Applied Physics*, **116**, 063906 (2014)

54. Soliton propagation in micron-sized magnetic ratchet elements  
J.-H. Lee, D. Petit, R. Lavrijsen, A. Fernandez-Pacheco, R. Mansell, R.P. Cowburn

*Applied Physics Letters*, **104**, 232404 (2014)

55. Beam-Induced Fe Nanopillars as Tunable Domain-Wall pinning Sites  
J.H. Franken, M.A.J. van der Heijden, T.H. Ellis, R. Lavrijsen, C. Daniels, D. McGrouther, H.J.M. Swagten, B. Koopmans

*Advanced Functional Materials*, **24**, 23, 3508-3514 (2014)

56. Domain Imaging during soliton propagation in a 3D magnetic ratchet  
J.-H. Lee, R. Mansell, D. Petit, A. Fernandez-Pacheco, R. Lavrijsen, R. P. Cowburn

*SPIN, Vol 3, No. 4*, 134001 (2013)

57. Domain wall depinning governed by the spin Hall effect  
P.P.J. Haazen, E. Mure, J.H. Franken, R. Lavrijsen, H.J.M. Swagten, B. Koopmans

*Nature Materials*, **12**, 299-303 (2013)

58. Magnetic states in low-pinning high-anisotropy magnetic nanostructures suitable for dynamic imaging  
F. Buttner, C. Moutafis, A. Bisig, P. Wohlhuter, C.M. Gunther, J. Mohanty, J. Guillufe, M. Schneider, C.V. Schmising, S. Schaffert, B. Pfau, M. Hantschmann, M. Riemer, M. Emmel, S. Finizio, G. Jakob, M. Weigand, J. Rhensius, J.H. Franken, R. Lavrijsen, H.J.M Swagten, H. Stoll, S. Eisebitt, M. Klau

*Physical Review B*, **87**, 134422 (2013)

59. Controllable nucleation and propagation of topological magnetic solitons in CoFeB/Ru ferrimagnetic superlattices  
A. Fernandez-Pacheco, D. Petit, R. Mansell, R. Lavrijsen, J.H. Lee, R.P. Cowburn

*Physical Review B*, **86**, 104422 (2012)

60. Giant anomalous Hall effect in Fe-based microwires grown by focused-electron-beam-induced deposition  
R. Cordoba, R. Lavrijsen, A. Fernandez-Pacheco, M.R. Ibarra, F. J. Schoenaker, T. Ellis, B. Barcones-Campo, J.T. Kohlhepp, H.J.M. Swagten, B. Koopmans, J.J.L. Mulders and J.M. De Teresa

*Journal of Physics D: Applied Physics*, **45**, 035001 (2012)

61. Domain-Wall pinning by local control of anisotropy in Pt/Co/Pt strips  
J.H. Franken, M. Hoeijmakers, R. Lavrijsen, H.J.M. Swagten

*Journal of Physics: Condensed matter*, **24**, 024216 (2012)

62. Precise control of domain wall injection and pinning using helium and gallium focused ion beams  
J.H. Franken, M. Hoeijmakers, R. Lavrijsen, J. T. Kohlhepp, H. J. M. Swagten, B. Koopmans

*Journal of Applied Physics*, **109**, 07D504 (2011)

63. Tunable magnetic domain wall oscillator at an anisotropy boundary  
J.H. Franken, R. Lavrijsen, J. T. Kohlhepp, H. J. M. Swagten, B. Koopmans

*Applied Physics Letters*, **98**, 102512 (2011)

64. Spin motive forces due to magnetic vortices and domain walls  
M.E. Lucassen, G.C.F.L. Kruis, R. Lavrijsen, H.J.M. Swagten, B. Koopmans and R.A.
Duine
*Physical Review B, 84, 014414 (2011)*

65. **Correlation between Magnetism and Spin-Dependent Transport in CoFeB Alloys**
P.V. Paluskar, R. Lavrijsen, M. Sicot, J. T. Kohlhepp, H.J.M. Swagten, and B. Koopmans
*Physical Review Letters 102, 016602 (2009)*

66. **Magnetization Dynamics and Gilbert damping in ultrathin Co<sub>48</sub>Fe<sub>32</sub>B<sub>20</sub> films with out-of-plane anisotropy**
G. Malinowski, K.C. Kuiper, R. Lavrijsen, H.J.M. Swagten, B. Koopmans
*Applied Physics Letters 94, 102501 (2009)*

67. **Tunneling spin polarization and annealing of Co<sub>72</sub>Fe<sub>8</sub>B<sub>20</sub>**
H.J.M. Swagten, P.V. Paluskar, R. Lavrijsen, J.T. Kohlhepp, B. Koopmans
*Journal of Magnetism and Magnetic Materials 310 (2, Pt. 3), 2012-2014 (2007)*

**Presentations**

i. **Magnetic chirality controlled by the interlayer exchange interaction**
R. Lavrijsen, M.J.M. Meijer, J. Lucassen, F. Kloodt-Twesten, R. Frompter, O. Kurnosikov, R.A. Duine, H.J.M. Swagten, B. Koopmans
SOL-SKYMAG 2021, San-Sebastian Spain; *online due to Pandemic* (June 2021)

ii. **(Invited) Spin-wave detection for DMI and beyond the optical diffraction limit**
R. Lavrijsen, J. Lucassen, M. Peeters, C. Schippers, B. Koopmans, H. Swagten
Magnetofon workshop on ultrafast Opto-Magneto-Electronics (COST ACTION) (November 2020)

iii. **Ferrimagnetic Co/Gd bilayers for combining All-Optical-Switching and Spintronics,**
R. Lavrijsen, M. Peeters, M.L.M. Lalieu, Y. van Hees, K. Poissonnier, B. Koopmans
10th International Symposium on Metallic Multilayers, Madrid, Spain (June 2019)

iv. **(Invited) All-optical switching in Co/Gd bilayers and chirality determination using SEMPA, R. Lavrijsen, et al.**
M-SNOWS, Nancy, France (September 2018)

v. **(Invited) On spin-orbit torques, chiral magnetization textures and e-control of magnetization in ultrathin multilayers**
R. Lavrijsen, H.J.M. Swagten, B. Koopmans
International Conference on Nanoscale Magnetism, Turkey (September 2016) cancelled due to political situation in Turkey

vi. **Manipulating the RKKY coupling strength by electric fields**
R. Lavrijsen, M. Lalieu, R. Raijmakers, H.J.M. Swagten, B. Koopmans
IEEE 2016 International Symposium On Metallic Multilayers, Uppsala, Sweden (June 2016)

vii. **(Invited) Asymmetric exchange in Pt/Co/Ir/Pt multilayers**
R. Lavrijsen, R. Duine, H.J.M. Swagten, B. Koopmans
Wiesendanger group Symposium, Hamburg, Germany
viii. **(Invited)** Domain-walls, magnetic bubbles, and the Dzyaloshinskii-Moriya interaction
R. Lavrijsen, D. Hartmann, R. Duine, H.J.M. Swagten, B. Koopmans
SPRING2015, Spring meeting EMRS, Lille, France
(May 2015)

ix. **(Invited)** Symmetric exchange and charging the interlayer exchange coupling
R. Lavrijsen, D. Hartmann, R. Duine, H.J.M. Swagten, B. Koopmans
Thin Film Magnetization Group Symposium, Cambridge, UK
(March 2015)

x. Tuning asymmetric exchange: towards an ideal racetrack memory?
R. Lavrijsen, H.J.M. Swagten, B. Koopmans
COBRA symposium, TU/e, Eindhoven, The Netherlands
(February 2015)

xi. **(Invited)** Domain-wall depinning governed by the spin Hall effect and Dzyaloshinskii-Moriya interaction
R. Lavrijsen, J.H. Franken, D. Hartmann, R. Duine, H.J.M. Swagten, B. Koopmans
59th Annual Magnetism & Magnetic Materials Conference, Honolulu, Hawaii
(November 2014)

xii. **(Invited)** On domain-walls and spin-orbit torques
R. Lavrijsen, H.J.M. Swagten, P.J. Haazen, E. Mure, J.H. Franken, B. Koopmans
Deutsche Physikalische Gesellschaft Spring Meeting, Dresden, Germany
(April 2014)

xiii. On spin-orbitronics and 3D soliton ratchets
R. Lavrijsen, H.J.M. Swagten, P.J. Haazen, E. Mure, J.H. Franken, B. Koopmans, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
Physics@FOM Meeting, Veldhoven, The Netherlands
(January 2014)

xiv. **(Invited)** On spin-orbitronics, soliton ratchets and domain walls
R. Lavrijsen; Workshop: Spintronics: Its Frontiers, Challenges and Opportunities
Nanyang Technological University Singapore, Singapore
(January 2014)

xv. **(Invited)** Domain-wall depinning governed by the spin Hall effect
R. Lavrijsen, H.J.M. Swagten, P.J. Haazen, E. Mure, J.H. Franken, B. Koopmans
Joint European Magnetics Symposia, Rhodes, Greece
(August 2013)

xvi. **(Invited)** Multiple soliton propagation through a magnetic superlattice
R. Lavrijsen, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
IEEE 2013 International Symposium On Metallic Multilayers, Kyoto, Japan
(May 2013)

xvii. **(Invited)** Towards fully 3-dimensional spintronics - MRAM
R. Lavrijsen, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
IMEC, Leuven, Belgium
(December 2012)

xviii. 3D spintronics: Perpendicularly magnetized soliton ratchet
R. Lavrijsen, J-H. Lee, A. Fernandez-Pacheco, D. Petit, R. Mansell, R.P. Cowburn
Joint European Magnetic Symposia, Parma, Italy
(September 2012)

xix. **Single perpendicularly magnetized CoFeB layers for 3D spintronics**
R. Lavrijsen, A. Fernandez-Pacheco, D. Petit, J-H. Lee, R. Mansell, R.P. Cowburn
Intermag, IEEE International Magnetics Conference, Vancouver, Canada
(May 2012)

xx. **Domain walls in perpendicularly magnetized stripes violating spin-transfer torque?**
R. Lavrijsen, J.T. Kohlhepp, H.J.M. Swagten, B. Koopmans
55th Annual Conference on Magnetism & Magnetic Materials, Atlanta, USA
(November 2010)

xxi. **(Invited) Domain walls in perpendicularly magnetized stripes violating spin-transfer torque?**
R. Lavrijsen, J.T. Kohlhepp, H.J.M. Swagten, B. Koopmans
IEEE 2010 International Symposium On Metallic Multilayers, Berkeley, USA
(September 2010)

xxii. **Perpendicular Pt / CoFeB / Pt, a tunable system for domain wall dynamics**
R. Lavrijsen, G. Malinowski, J.T. Kohlhepp, H.J.M. Swagten, B. Koopmans
53rd Annual Conference on Magnetism & Magnetic Materials, Austin, Texas, USA
(November 2008)

**SUPERVISION PD**

1. Dr. M.Sc., Dong-Soo Han (2014-2016)
2. Dr. M.Sc., Jung-Woo Koo (2016-2017)
3. Dr. M.Sc., Mariia Efremova (starting Feb. 2022)

**SUPERVISION PHD**

1. Dr. Ir. Jeroen Franken (2014)
2. Dr. Ir. Sjors Schellekens (2014)
3. Dr. Ir. Arno van de Brink (2016)
4. Dr. Ir. Yuxiang Yin (2018) Co-Promotor
5. Dr. Ir. Mark Lalieu (2019) Co-Promotor
6. Dr. Ir. Fanny Ummelen (2020) Co-Promotor
7. Dr. Ir. Juriaan Lucassen (2020) Co-Promotor (Cum-Laude)
8. Dr. M.Sc. Anni Cao (2020) Co-Promotor
9. M.Sc. Marielle Meijer (Expected 2021) Co-Promotor
10. M.Sc. Lucas Wang (Expected 2021) Co-Promotor
11. M.Sc. Ece Demirer (Expected 2021) Co-Promotor
12. M.Sc. Zilu Wang (Expected 2022) Co-Promotor
13. Ir. Youri van Hees (Expected 2022) Co-Promotor
14. Ir. Tom Lichtenberg (Expected 2022) Co-Promotor
15. M.Sc. Jianing Li (Expected 2023) 1st promotor
16. M.Sc. Pingzhi Li (Expected 2023) 2nd promotor
17. M.Sc. Adrien Petrillo (Expected 2024) 1st promotor
18. M.Sc. Thomas Kools (Expected 2024) 1st promotor
19. M.Sc. Mark de Jong (Expected 2024) 1st promotor
20. M.Sc. Julian Hintermayr (Expected 2025) 2nd promotor
21. M.Sc. Lorenzo Gnoatto (Expected 2025) 1st promotor

SUPERVISION MASTER PROJECTS

1. M.Sc. Michael Beljaars (2008), Electron beam induced deposition of Iron
2. M.Sc. Coen Loermans (2009), Perpendicularly magnetized ultrathin Pt/CoFeB/Pt films
3. M.Sc. Paul Janssen (2009), The nanostencil process
4. M.Sc. Frank Schoenaker (2010), Ferromagnetic nanostructures by EBID
5. M.Sc. Jeroen Franken (2010), Domain wall motion PMA films
6. M.Sc. Paul Soto (2010), Nano-stencil fabrication for spin-torque devices
7. M.Sc. Geerit Kruis (2011), Racing domain walls
8. M.Sc. Tim Ellis (2011), Novel Deposition of Magnetic Nanostructures
9. M.Sc. Mark Lalieu (2014), Charging the interlayer exchange coupling
10. M.Sc. Juriaan Lucassen (2015), Determining the SHE using STS
11. M.Sc. Dorris Slapak (2016), Growing BaTiO3 for future magnetic memory devices
12. M.Sc. Guido Hendriks (2016), Synth.-Multif. heterostructures with the Spin Hall Effect
13. M.Sc. Pim van Nispen (2017), Characterising the DMI by magnetic bubble expansion
14. M.Sc. Tim Ellis (2018), Novel Deposition of Magnetic Nanostructures
15. M.Sc. Linard van der Veeken (2018), 120 nm diameter Magnetic Nanoplatelets
16. M.Sc. Jan van Mastrigt (2018), Characterising Magnetic NanoPlatelets
17. M.Sc. Pim van Nispen (2017), Towards a working 3D data storage device
18. M.Sc. Wouter Kuyper (2018), Field driven and current induced domain wall motion
19. M.Sc. Can Avci (2019), Towards a working 3D data storage device
20. M.Sc. Bennert Smit (2021), Towards a working 3D data storage device
21. M.Sc. Axel Deenen (2021), Towards a working 3D data storage device
22. M.Sc. Miquel de Jong (2020), Towards a working 3D data storage device
23. M.Sc. Huub van der Veeken (2020), Towards a working 3D data storage device
24. M.Sc. Bennert Smit (2021), Towards a working 3D data storage device
25. M.Sc. Axel Deenen (2021), Towards a working 3D data storage device
26. M.Sc. Julian Hintermayr (2025), Towards a working 3D data storage device
27. M.Sc. Paul Lalieu (2014), Towards a working 3D data storage device
28. M.Sc. Tim Ellis (2018), Towards a working 3D data storage device
29. M.Sc. Lieke Ruijs (2018), Towards a working 3D data storage device
30. B.Sc. Joris Jongen (2008), Quantitative Magnetic Force Microscopy
31. B.Sc. Rik Paesen (2008), Field driven and current induced domain wall motion
32. B.Sc. Tim Weenkenstro (2009), Ion Beam Milling
33. B.Sc. Roger Bosch (2009), AMR of EBID-deposited Fe nanowires
34. B.Sc. Can Avci (2009), Magnetic characterization of Co/Pt layers
35. B.Sc. Mark Lalieu (2012), Towards a working 3D data storage device
36. B.Sc. Mark Lalieu (2012), Towards a working 3D data storage device
37. B.Sc. Can Avci (2009), Towards a working 3D data storage device
38. B.Sc. Can Avci (2009), Towards a working 3D data storage device
39. B.Sc. Jan van Mastrigt (2018), Towards a working 3D data storage device
40. B.Sc. Huub van der Veeken (2018), *Characterising Co/Gd Ferrimagnetic systems*
41. B.Sc. Stef van den Hoek (2019), *Simulating the behaviour of SAF platelets*
42. B.Sc. Jasper van Tongeren (2019), *Simulating the attraction and repulsion beads*
43. B.Sc. Floris van Riel (2019), *MFM imaging of magnetic skyrmions*
44. B.Sc. Paul van de Meugheuvel (2019), *Spin-current assisted All-Optical-Switching*
45. B.Sc. Pim Lueb (2020), *Characterising the anisotropy of Anti-Ferromagnets*
46. B.Sc. Gijs Simons (2020), *Modelling of s-d interaction in RKKY coupled stacks for AOS*
47. B.Sc. Sara Tjon (2020), *Modelling of mechanical response of mNPLs*
48. B.Sc. Max van der Schans (2020), *Literature survey and modelling for mNPLs*
49. B.Sc. Wouter Kuyper (2020), *Co/Gd bilayer characterization*
50. B.Sc. Carolus Hamers (2021), *Nanoplatelets in rotating magnetic fields*
51. B.Sc. Cas Robben (2021), *Ultrafast demagnetization of Synthetic Ferrimagnets*
52. B.Sc. Marnix van Gurp (2021), *Magnetostatics of Co/Gd quad-layers*
53. B.Sc. Roland van der Vegt (2021), *Laser induced demagnetization of NPs in liquid*
54. B.Sc. Tom Jenniskens (2021), *Flip-Chip FMR*
55. B.Sc. Wieneke Sijtsma (2021), *Coercivity increase of nanopatterned SAF’s*
56. B.Sc. Stijn van der Voort (expected 2022), *Co/Gd magnetostatics*

**SUPERVISED EXTERNAL INTERNSHIPS**

57. @Cambridge UK (2017), Ruben Hamans, *3D scaffolds for magnetic injection*
58. @Cambridge UK (2017), Kaylee Hakkel, *Synthetic Antiferromagnets*
59. @ASML NL (2019), Jan van Mastrigt, *Ultrasensitive current sensors*
60. @SCIL NL (2019), Huub van der Veeken, *Characterizing the imprint wetting process*
61. @MIT USA (2019), Don van Elst, *SOT’s in Co/Gd multilayers*
62. @Argonne USA (2019), Arthur Hendriks, *MOKE using plasmonics ultrajets*
63. @Singapore (2020), Bennert Smit, *Magneto resistance setup build and characterisation*
64. @ETH Zurich CH (2020), Floris van Riel, *Spin-Orbit torque quantification*
65. @Pro-Drive NL (2020), Tamar Cromwijk, *Laser-beam steering*
66. @ETH Zurich CH (2021), Floris van Riel, *Tuning magnetic textures with FE’s*
67. @SCIL NanoImprint NL (2021), Paul v/d Meugheuvel, *Sol-Gel deformation*
68. @EPFL Lausanne CH (2021), Axel Deenen, *3D magnonic simulations*
69. @SCIL Nanoimprint NL (2021), Lieke Ruijs, *Fourier Microscopy*
70. @ETH Zurich CH (2021), Lian de Jong, *Spin-Orbit Torques*
71. @IMEC BE (expected 2022), Stijn van de Sande, *Inverse Magnetostriction via FE’s*