

Trainee	University	Supervisor	Publication title	Authors	Venue / source	Year	Source URL
Adam Prus-Czarnecki	McGill University	Peter Grutter	Hydrogen passivation effects on spatially resolved charge trap densities in Si (100)-SiO ₂	AJ Czarnecki; NL Kolev; P See; NJ Sullivan; WA Behn; NJ Curson; et al.	AIP Advances 15 (10)	2025	https://doi.org/10.1063/5.0283324
Clément Fortin	McGill University	Tamar Pereg-Barnea	Topological amplification of the bosonic Kitaev chain with nonuniform loss	C Fortin; K Wang; T Pereg-Barnea	Physical Review B 112 (6), 064208	2025	https://doi.org/10.1103/PhysRevB.112.064208
Clément Fortin	McGill University	Tamar Pereg-Barnea	Unifying Anderson transitions and topological amplification in non-Hermitian chains	C Fortin; K Wang; T Pereg-Barnea	Physical Review B 112 (17), 174208	2025	https://doi.org/10.1103/PhysRevB.112.174208
Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	Nuclear Spin-Free ⁷⁰ Ge/ ²⁸ Si/ ⁷⁰ Ge Quantum Well Heterostructures Grown on Industrial SiGe-Buffered Wafers	P Daoust; N Rotaru; D Biswas; et al.	Advanced Science	2026	https://doi.org/10.1002/advs.202523504
Pierre-Gabriel Rozon	McGill University	Tamar Pereg-Barnea	Broken unitary picture of dynamics in quantum many-body scars	PG Rozon; K Agarwal	Physical Review Research 6, 023041	2024	https://doi.org/10.1103/PhysRevResearch.6.023041
Pierre-Gabriel Rozon	McGill University	Tamar Pereg-Barnea	Optimal twirling depth for classical shadows in the presence of noise	PG Rozon; N Bao; K Agarwal	Physical Review Letters 133, 130803	2024	https://doi.org/10.1103/PhysRevLett.133.130803
Sebastien Avakian	McGill University	Tamar Pereg-Barnea	Long-range multipartite entanglement near measurement-induced transitions	SJ Avakian; T Pereg-Barnea; W Witczak-Krempa	Physical Review Research 7, 023135	2025	https://doi.org/10.1103/PhysRevResearch.7.023135

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Ivan Martinez Berumen	McGill University	Tamar Pereg-Barnea	Charged magnons on the surface of a topological insulator	I Martinez-Berumen; WA Coish; T Pereg-Barnea	Physical Review B	2023	https://doi.org/10.1103/g4l8-2w9l
Ivan Martinez Berumen	McGill University	Tamar Pereg-Barnea	Tunable multimagnon Floquet topological edge states	I Martinez-Berumen; T Pereg-Barnea; WA Coish	Physical Review B 113, 104419	2026	https://doi.org/10.1103/PhysRevB.113.104419
Ayşe Melis Aygar; Sam Bovey; Bahar Molavi	McGill University	Thomas Szkopek	Mass inversion at the Lifshitz transition in monolayer graphene by diffusive, high-density, on-chip doping	AM Aygar; O Durnan; B Molavi; SNR Bovey; A Grüneis; T Szkopek	ACS Nano 18, 9092-9099	2024	https://doi.org/10.1021/acsnano.3c13187
Bahar Molavi	McGill University	Thomas Szkopek	Operando Hall Measurement of Covalent Functionalization of a Ag/AgCl Gated Graphene Field Effect Transistor in a Flow Cell	B Molavi; CM Bazán; D Bouilly; T Szkopek	ACS Applied Electronic Materials 7, 8116-8123	2025	https://doi.org/10.1021/acsaelm.5c01109
Bahar Molavi	McGill University	Thomas Szkopek	Conductivity Preservation of Aryl Diazonium-Functionalized Bilayer Graphene Probed by Operando Hall	B Molavi; CM Bazán; T Vuu; et al.	ACS Applied Electronic Materials	2026	https://doi.org/10.1021/acsaelm.6c00919
Suman Jyoti De	McGill University	Tamar Pereg-Barnea	Nanoscale Defects as Probes of Time-Reversal Symmetry Breaking	Suman Jyoti De; Tami Pereg-Barnea; Kartiek Agarwal	APS Phys. Rev. X 16, 011001	2026	https://journals.aps.org/prx/abstract/10.1103/9h4l-21mt

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Bill P. Truong	McGill University	Tamar Pereg-Barnea	Shuttling Majorana zero modes in disordered and noisy topological superconductors	Bill P. Truong; Kartiek Agarwal; T. Pereg-Barnea	Phys. Rev. B 113, 064506 (2026)	2026	https://doi.org/10.48550/arXiv.2504.10749
Antoine labbé	uOttawa	Louis Gaudreau	Magneto-transport Spectroscopy of Hole Quantum Dots in Monolayer WSe ₂	Antoine Labbé; Justin Boddison-Chouinard; Alex Bogan; Kenji Watanabe; Jean Lapointe; Takashi Taniguchi; Marek Korkusinski; Adina Luican-Mayer; Louis Gaudreau	APS Global Physics Summit 2026	2026	Not Available
Meixin Cheng; Xianfan Nie	uWaterloo	Adam Wei Tsen	Observation and Control of the Magnetic Photogalvanic Effect from Strongly Bound Excitons	X. Nie; T. Patel; H. Lee; C. Wang; M. Cheng; M. Lai; B. Yang; M. Pennacchiatti; S. Liu; H. Lei; L. Zhao; M. E. Reimer; S. Y. Quek; A. W. Tsen	Physical Review X	2026	Under Review
Meixin Cheng	uWaterloo	Adam Wei Tsen	Tuning Coupled Toroidic and Polar Orders in a Bilayer Antiferromagnet	C. Wang; X. Guo; Z. Zhai; M. Cheng; S-W. Cheong; A. W. Tsen; B. Lv; L. Zhao	Physical Review X	2026	Under Review
Meixin Cheng	uWaterloo	Adam Wei Tsen	Two-dimensional magnets stack up against multiferroic competition	M. Cheng; A. W. Tsen	Nature Materials 25, 891 (2026). News and Views Article	2026	https://www.nature.com/articles/s41563-026-02591-w

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Meixin Cheng	uWaterloo	Adam Wei Tsen	Super-Moiré Spin Textures in Twisted Antiferromagnets	K. C. Wong; R. Peng; E. Anderson; J. Ross; B. Yang; M. Cheng; S. Jayaram; M. Lenger; X. Zhou; Y. T. Kong; T. Taniguchi; K. Watanabe; M. A. McGuire; R. Stöhr; A. W. Tsen; E. J. G. Santos; X. Xu; J. Wrachtrup	Nature Nanotechnology 21, 359 (2026)	2026	https://www.nature.com/articles/s41565-025-02103-y
Meixin Cheng	uWaterloo	Adam Wei Tsen	Field-Free, Deterministic Giant Spin-Orbit Torque Switching of 1.3 T Perpendicular Magnetization With Symmetry-Lifted Topological Surface States	H. Ren; Y. Peng; M. Cheng; Y. Shi; R. Asadi; A. W. Tsen; G-X. Miao	Advanced Materials 38, e19678 (2026)	2026	https://advanced.onlinelibrary.wiley.com/doi/10.1002/adma.202519678
Meixin Cheng	uWaterloo	Adam Wei Tsen	Direct observation of distinct bulk and edge nonequilibrium spin accumulation in ultrathin MoTe2	F. Chen; K. Das; B. Yang; C. Wang; S. Zhong; D. Golovanova; H. Ren; T. Wang; X. Luo; Y. P. Sun; L. Zhao; G-X. Miao; B. Yan; A. W. Tsen	Nature Communications 16, 6132 (2025)	2025	https://www.nature.com/articles/s41467-025-61550-2
Meixin Cheng	uWaterloo	Adam Wei Tsen	Macroscopic Tunneling Probe of Moiré Spin Textures in Twisted CrI3	B. Yang; T. Patel; M. Cheng; K. Pichugin; L. Tian; N. Sherlekar; S. Yan; Y. Fu; S. Tian; H. Lei; M. E. Reimer; J. Okamoto; A. W. Tsen	Nature Communications 15, 4982 (2024)	2024	https://www.nature.com/articles/s41467-024-49261-6
Alexander Friedlan	uToronto	Hae-Young Kee	Emergence of nematic loop-current bond order in kagome metals near van Hove singularities	Alex Friedlan; Hae-Young Kee	Physical Review B	2026	https://doi.org/10.1103/dz1w-s9t2

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Alexander Friedlan	uToronto	Hae-Young Kee	Valley polarization, magnetization, and superconductivity in bilayer graphene near the van Hove singularity	Alex Friedlan; Heqiu Li; Hae-Young Kee	Physical Review B 111, 024504	2025	https://doi.org/10.1103/PhysRevB.111.024504
Antoine Matar; Haoting Xu	uToronto	Hae-Young Kee	Understanding anomalous magnetothermal transport via disentangling shear and compression phonons	H Xu; A Matar; HY Kee	npj Quantum Materials	2026	https://doi.org/10.1038/s41535-026-00922-3
Bogeng Wen; Jiefu Cen	uToronto	Hae-Young Kee	Ferrichiral skyrmions with sublattice-resolved chirality in an extended Kitaev model on the triangular lattice	Bogeng Wen; Jiefu Cen; Hae-Young Kee	Physical Review B	2026	https://doi.org/10.1103/ljrz-1h8y
Bogeng Wen	uToronto	Hae-Young Kee	Vanishing ordered moment in the frustrated triangular lattice antiferromagnet CuNdO ₂	Jonathan Gaudet et al.	npj Quantum Materials 11, 29	2026	https://doi.org/10.1038/s41535-026-00854-y
Mandev Bhullar; Haoting Xu	uToronto	Hae-Young Kee	Field-induced ordered phases in anisotropic spin-1/2 Kitaev chains	Mandev Bhullar; Haoting Xu; Hae-Young Kee	Physical Review B 111, 104439	2025	https://doi.org/10.1103/PhysRevB.111.104439
Haoting Xu	uToronto	Hae-Young Kee	Reviving Majorana zero modes in the spin-Kitaev ladder model	H Xu; HY Kee	Physical Review B 110, 195133	2024	https://doi.org/10.1103/PhysRevB.110.195133
Jiefu Cen	uToronto	Hae-Young Kee	Thermal and quantum fluctuations in the extended Kitaev-Yao-Lee spin-orbital model	Jiefu Cen; Hae-Young Kee	Physical Review B 113, 174430	2026	https://doi.org/10.1103/dx3p-s4f3

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Jiefu Cen	uToronto	Hae-Young Kee	Intermediate phases in α -RuCl ₃ under in-plane magnetic field via interlayer spin interactions	Jiefu Cen; Hae-Young Kee	Physical Review B 112, 024419	2025	https://doi.org/10.1103/tr8c-pxbr
Jiefu Cen	uToronto	Hae-Young Kee	Spin-orbit coupling controlled two-dimensional magnetism in chromium trihalides	Inhee Lee et al.	Physical Review B 113, 014401	2026	https://doi.org/10.1103/qg64-ztxj
Patrick Del Vecchio	Polytechnique Montréal	Oussama Moutanabbir	Fully tunable strong spin orbit interactions in light hole germanium quantum channels	P. Del Vecchio; S. Bosco; D. Loss; and O. Moutanabbir	Communications Physics	2026	In Press
Patrick Del Vecchio; Alexis Dubé-Valade; Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	Nuclear spin-free 70Ge/28Si70Ge quantum well heterostructures grown on industrial SiGe-buffered wafers	P. Daoust; N. Rotaru; D. Biswas; S. Koelling; E. Rahier; A. Dubé-Valade; P. Del Vecchio; M.S. Edwards; M. Tanvir; E. Sajadi; J. Salfi; and O. Moutanabbir	Advanced Science 13, e23504 (2026)	2026	https://advanced.onlinelibrary.wiley.com/doi/10.1002/advs.202523504
Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	Waveguide-Coupled Mid-Infrared GeSn Membrane Photodetectors on Silicon-Insulator	C. Lemieux-Leduc; M. R.M. Atalla; S. Assali; N. Rotaru; J. Brodeur; S. Kéna-Cohen; O. Moutanabbir; and Y.-A. Peter	ACS Photonics 12, 6343 (2025)	2025	https://pubs.acs.org/apchd5/article/12/11/6343/3760553/Waveguide-Coupled-Mid-Infrared-GeSn-Membrane
Patrick Del Vecchio; Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	GeSn Quantum Wells as a Platform for Spin-Resolved Hole Transport	P. Kaul; J. Kartheim; J. Buchhorn; T. Kawano; T. Usubuchi; J. Ishihara; N. Rotaru; P. Del Vecchio; O. Concepcion; Z. Ikonic; D.	Communication Materials 6, 216 (2025)	2025	https://www.nature.com/articles/s43246-025-00934-9

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				Grützmacher; Q-T. Zhao; O. Moutanabbir; M. Kohda; T. Schäpers; and Dan Buca			
Patrick Del Vecchio; Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	Hole spin in direct bandgap germanium-tin quantum dot	N. Rotaru; P. Del Vecchio; and O. Moutanabbir	Physical Review B 112, 125428 (2025)	2025	https://journals.aps.org/prb/abstract/10.1103/nr1v-sngw
Patrick Del Vecchio	Polytechnique Montréal	Oussama Moutanabbir	Light-Hole Spin Confined in Germanium	P. Del Vecchio; and O. Moutanabbir	Physical Review B Vol. 110, 045409 (2024).	2024	https://journals.aps.org/prb/abstract/10.1103/PhysRevB.110.045409
Patrick Del Vecchio; Nicolas Rotaru	Polytechnique Montréal	Oussama Moutanabbir	Nuclear Spin-Depleted, Isotopically Enriched $^{70}\text{Ge}/^{28}\text{Si}/^{70}\text{Ge}$ Quantum Wells	O. Moutanabbir; S. Assali; A. Attiaoui; G. Daligou; P. Daoust; P. Del Vecchio; S. Koelling; L. Luo; N. Rotaru	Advanced Materials Vol. 36, 2305703 (2024)	2024	https://advanced.onlinelibrary.wiley.com/doi/ful/10.1002/adma.202305703
Patrick Del Vecchio	Polytechnique Montréal	Oussama Moutanabbir	Radiative Carrier Lifetime in Ge1-xSnx Mid-Infrared Emitters	G. Daligou; A. Attiaoui; A. Assali; P. Del Vecchio; and O. Moutanabbir*	Physical Review Applied Vol. 20, 064001 (2023)	2023	https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.20.064001
Uttung Surange	McGill University	Thomas Szkopek	Isotope-Labeled Graphene Reveals the Extrinsic Origin of Raman Signatures Assigned to Graphene Edge Modes	U Surange; V Lemelin; et al.	ACS Nano 20, 19369–19376	2026	https://doi.org/10.1021/acsnano.6c04235
Jérôme Fournier	uSherbrooke	André-Marie Tremblay	Two T-linear scattering-rate regimes in the	J Fournier; PO Downey; CD Hébert; et al.	SciPost Physics 17, 072	2020	https://doi.org/10.21468/SciPostPhys.17.2.072

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			triangular lattice Hubbard model			2024	
Jérôme Fournier	uSherbrooke	André-Marie Tremblay	Frenkel line and the pseudogap: An analogy between classical and electronic fluids	J Fournier; PO Downey; O Gingras; et al.	Physical Review Research 8, 023278	2026	https://doi.org/10.1103/PhysRevResearch.8.023278
Camille Lahaie	uSherbrooke	André-Marie Tremblay	Antiferromagnetic pseudogap in the two-dimensional Hubbard model deep in the renormalized classical regime	Yury Vilk; Camille Lahaie; A.-M.S. Tremblay	Phys. Rev. B 110, 125154/1-12	2024	https://doi.org/10.1103/PhysRevB.110.125154
Jérôme Leblanc	uSherbrooke	André-Marie Tremblay	Resilient strange metal at an unconventional quantum critical point in d=2	J. Leblanc, A.-M.S. Tremblay	Physical Review Letters	2026	Under Review