Michael Dobinson

Victoria, BC, Canada
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EDUCATION

Starting 09/2022 **PhD in Physics**
Simon Fraser University
Supervisor: Prof. Stephanie Simmons

09/2020 – 04/2022 **MASc in Electrical and Computer Engineering**
University of Victoria
Supervisor: Prof. Reuven Gordon
GPA: 8.8/9.0
- Thesis titled "A route to erbium-doped nanocrystals as a single photon source using double nanohole optical tweezers"

09/2013 – 08/2018 **BEng in Electrical Engineering**
University of Victoria
GPA: 8.15/9.0

RESEARCH EXPERIENCE

09/2020 – 04/2022 **Research Assistant,** Nanoplasmonics Research Group
University of Victoria
Supervisor: Prof. Reuven Gordon

- Conducted research on erbium-doped nanoparticles using plasmon-enhanced optical tweezers to isolate single-emitters and evaluate their properties as a novel quantum light source.

TEACHING EXPERIENCE

09/2021 – 04/2022 **Laboratory Teaching Assistant,** University of Victoria
ECE 355: Microprocessor-Based Systems (09/2021 – 12/2021)
ECE 320: Electronic Devices I (01/2022 – 04/2022)
- Duties included assisting and providing feedback to students, marking projects and reports. Overall student evaluation rating: 3.81/4.0

PROFESSIONAL EXPERIENCE

08/2018 – 07/2020 **Hardware Engineer (EIT)**
Kobelt Manufacturing Co. Ltd., Surrey, BC

- Designed embedded electronic systems for marine steering applications including functional design, circuits, and PCB layout.

01/2016 – 04/2017 **Hardware Developer (Co-op)**
LineSpect, Richmond, BC

- Designed electronic systems for power line inspection drones including sensors and power distribution.

09/2015 – 12/2015 **Embedded Software Engineer (Co-op)**
Delta-Q Technologies, Burnaby, BC

- Developed methods to evaluate battery state-of-health during charging using machine learning. Developed firmware in an Agile environment.

PUBLICATIONS

1. **M. Dobinson**, "A route to erbium-doped nanocrystals as a single photon source using double nanohole optical tweezers," M.A.Sc thesis, University of Victoria, Apr. 2022, doi: 1828/13900.
2. G. Hajisalem, E. Babaei, **M. Dobinson**, S. Iwamoto, Z. Sharifi, J. Eby, M. Synakewicz, L. S. Itzhaki, R. Gordon, "Accessible High-Performance Double Nanohole Tweezers," *Opt. Express*, vol. 30, no. 3, p. 3760, Jan. 2022, doi: 10.1364/OE.446756.
3. R. Gordon and **M. Dobinson**, "Plasmonics-mine the gap: opinion," *Opt. Mater. Express*, vol. 11, no. 7, pp. 2192–2196, Jun. 2021, doi: 10.1364/OME.430547.
4. Z. Sharifi, **M. Dobinson**, G. Hajisalem, M. S. Shariatdoust, A. L. Frencken, F. C. J. M. van Veggel, and R. Gordon, "Isolating and enhancing single-photon emitters for 1550 nm quantum light sources using double nanohole optical tweezers," *J. Chem. Phys.*, vol. 154, no. 18, p. 184204, May 2021, doi: 10.1063/5.0048728.

CONFERENCE PUBLICATIONS

1. Z. Sharifi, **M. Dobinson**, G. Hajisalem, A. L. Frencken, F. C. J. M. van Veggel, and R. Gordon, "Enhancing and Isolating Lanthanide-Doped Nanocrystals Using Double Nanohole Optical Tweezers for Quantum Light Sources at 1550 nm," in *2021 IEEE 16th Nanotechnology Materials and Devices Conf. (NMDC)*, Jan. 2022, pp. 1–4, doi: 10.1109/NMDC50713.2021.9677544.
2. M. S. Shariatdoust, **M. Dobinson**, G. Hajisalem, and R. Gordon, "Hexagonal Boron Nitride Second Harmonic Generation Using Gold Nanorods with Continuous Laser Source," in *2021 IEEE 16th Nanotechnology Materials and Devices Conf. (NMDC)*, Jan. 2022, pp. 1–4, doi: 10.1109/NMDC50713.2021.9677498.

3. Z. Sharifi, **M. Dobinson**, G. Hajisalem, A. L. Frencken, F. C. J. M. van Veggel, and R. Gordon, "Upconversion Nanocrystal Emission Rate Enhancement Using Double Nanoholes," in *Proc. SPIE 11798: Optical Trapping and Optical Micromanipulation XVIII*, Aug. 2021, pp. 184–188, doi: 10.1117/12.2594280.

PROFESSIONAL PRESENTATIONS

1. **M. Dobinson,** "Enhancing and Isolating Lanthanide-Doped Nanocrystals Using Double Nanohole Optical Tweezers for Quantum Light Sources at 1550 nm," presented at *2021 IEEE 16th Nanotechnology Materials and Devices Conf. (NMDC)*, Vancouver, BC, Canada, Dec. 14, 2021.

EXTRACURRICULAR AND VOLUNTEER EXPERIENCE

2021 – 2022	**Vice President**, UVic OSA Student Chapter
2015 – 2017	**Embedded Systems Lead**, UVic AERO Student Team

PROFESSIONAL MEMBERSHIPS

2021 – present	**Member**, OSA, University of Victoria Student Chapter
2021 – present	**Member**, SPIE, University of Victoria Student Chapter
2021 – present	**Member**, IEEE
2018 – present	**EIT**, Engineers and Geoscientists BC

AWARDS

2020	British Columbia Graduate Scholarship (BCGS) – $15,000
2020 – 2022	University of Victoria Graduate Fellowship – $24,000/yr
2013 – 2018	University of Victoria Excellence Scholarship – $26,000
2013	University of Victoria Dean's Entrance Scholarship – $2,000

CERTIFICATIONS

2017	**ISED Canada,** Amateur Radio Operator, Advanced (VA7GND)
2015	**ISED Canada,** Amateur Radio Operator, Basic with Honours (VA7GND)