

Gary Alan Beane, Ph.D.

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Employment History

- 2018 – present 📌 **FLEET Research Fellow** Monash University, Melbourne, Victoria, Australia
- 2016 – 2018 📌 **Postdoctoral Fellow** University of Notre Dame, Notre Dame, Indiana, USA
- 2014 – 2016 📌 **Postdoctoral Fellow** University of California, Merced, California, USA

Education

- 2010 – 2014 📌 **Ph.D., University of Melbourne** in Materials Science.
Thesis title: *Excitation energy transfer in nanocrystal systems.*
- 2009 – 2009 📌 **B.Sc. Hons., University of Melbourne** in Chemistry.
Thesis title: *Energy transfer with Quantum Dots.*
- 2004 – 2008 📌 **B.Sc., University of Melbourne** with Majors in Chemistry, Mathematical Physics, Political Science.

Awards and Research Highlights

- 2018 📌 FLEET Fellowship
- 📌 High-impact journal publications include *Advanced Materials*, *Chemistry of Materials* and *ACS Nano*.




Scientific Outputs

- 📌 17 journal publications with over 1000 citations (Google Scholar).
- 📌 High-impact journal publications include *Advanced Materials*, *Chemistry of Materials* and *ACS Nano*.

Scientific Outputs

- 📌 Reviewer for top-tier international journals including: *ACS Nano*, *ACS Applied Materials and Interfaces*, *Langmuir* and *The Journal of Physical Chemistry*

Supervision and Mentoring








- 2018-present  School of Physics and Astronomy, Monash University: Co-supervisor of 2 PhD students, 2 Honours students, 3 undergraduate students
- 2016-2018  Department of Chemistry and Biochemistry, University of Notre Dame: Co-supervisor of 2 PhD students
- 2014-2016  School of Natural Sciences, University of California, Merced: Co-supervisor of 2 PhD students

Miscellaneous Experience

Awards and Achievements

- 2022-present  **Chair of Faculty of Science Early Career Network**, Monash University.
- 2018  **Representative for Postdoctoral Research Advisory Committee**, University of Notre Dame.
- 2017  **Vice President of Notre Dame Toastmasters**, University of Notre Dame.
- 2011  **Golden Büchner Award**, University of Melbourne.
- 2010  **Australian Postgraduate Award**, University of Melbourne.

Presentations

- 2022  "Shining a Light on Tomorrow's Materials", **Beane, G.**; Nguyen, T.P.; Oldfield, M.; Schiffrin, A., ECN Symposium, Monash University
-  "Using Light to Probe and Manipulate Topologically Non-trivial States", Virtual, Monash University
- 2020  "Using Light to Probe and Manipulate Topologically Non-trivial States", Virtual, Monash University
- 2017  "Surface Plasmon Polaritons in Gold Nanoplates", **Beane, G.**; Yu, K.; Devkota, T.; Johns, P.; Wang, G.P.; Hartland, G.V. *College of Science Joint Annual Meeting (COS JAM)*, Notre Dame, Indiana, USA.
- 2016  "Auger Dynamics in Type I CdSe/ZnSe Quantum Dots with Graded Interfaces", **Beane, G.**; Gong, K.; Kelley, D.F. *The 63rd Pacific Conference on Spectroscopy and Dynamics*, Asilomar Conference Center, Pacific Grove, California, USA.
- 2013  "Defect Mediated Energy Transfer in ZnO-dye conjugates", **Beane, G.**; Morfa, A.; Funston, A.; Mulvaney, P. *Materials Research Society (MRS)*, San Francisco, USA.
-  "Energy Transfer with Quantum Dots", **Beane, G.**; Morfa, A.; Funston, A.; Mulvaney, P., *Global Challenges - Opportunities for Nanotechnology*, Venice, Italy,

Miscellaneous Experience (continued)

- "Energy transfer from ZnO defects to a conjugated dye", **Beane, G.**; Morfa, A.; Funston, A.; Mulvaney, P. *International Conference on Nanoscience and Nanotechnology (ICONN)*, Perth, Australia.
- "A Re-examination of Energy Transfer with Quantum Dots", **Beane, G.**; Boldt, K.; Morfa, A.M.; Funston, A.; Mulvaney, P., *Humboldt Colloquium: Looking to the Future: International Research in a Changing World*, Sydney, Australia.
- 2012 ■ "Energy Transfer in Semiconducting Nanocrystals", **Beane, G.**; Morfa, A.; Funston, A.; Mulvaney, P. *RAPD Bio21 Research Symposium*, Melbourne, Australia

Research Publications

Journal Articles

- 1 Nguyen, T.-P., Klymenko, M., **Beane, G.**, Oldfield, M., Xing, K., Gebert, M., Bhattacharyya, S., Fuhrer, M. S., Cole, J. H. & Schiffrin, A. Non-Drude THz conductivity of graphene due to structural distortions. arXiv: 2310.06180 [cond-mat.mtrl-sci] (2023).
- 2 **Beane, G.**, Devkota, T., Brown, B. S. & Hartland, G. V. Ultrafast measurements of the dynamics of single nanostructures: A review. *Reports on Progress in Physics* **82**, 16401. ISSN: 00344885 (2019).
- 3 **Beane, G.**, S. Brown, B., Devkota, T. & V. Hartland, G. Light-Like Group Velocities and Long Lifetimes for Leaky Surface Plasmon Polaritons in Noble Metal Nanostripes. *The Journal of Physical Chemistry C* **123**, 15729–15737 (June 2019).
- 4 Devkota, T., **Beane, G.**, Yu, K. & Hartland, G. V. Attenuation of acoustic waves in ultrafast microscopy experiments. *Journal of Applied Physics* **125**, 163102. ISSN: 0021-8979 (Apr. 2019).
- 5 Devkota, T., Brown, B. S., **Beane, G.**, Yu, K. & Hartland, G. V. Making waves: Radiation damping in metallic nanostructures. *Journal of Chemical Physics* **151**, 080901. ISSN: 00219606 (Aug. 2019).
- 6 **Beane, G.**, Brown, B. S., Johns, P., Devkota, T. & Hartland, G. V. Strong Exciton-Plasmon Coupling in Silver Nanowire Nanocavities. *Journal of Physical Chemistry Letters* **9**, 1676–1681. ISSN: 19487185 (2018).
- 7 Devkota, T., Chakraborty, D., Yu, K., **Beane, G.**, Sader, J. E. & Hartland, G. V. On the measurement of relaxation times of acoustic vibrations in metal nanowires. *Physical Chemistry Chemical Physics* **20**, 17687–17693 (2018).
- 8 **Beane, G.**, Yu, K., Devkota, T., Johns, P., Brown, B., Wang, G. P. & Hartland, G. Surface plasmon polariton interference in gold nanoplates. *Journal of Physical Chemistry Letters* **8**, 4935–4941. ISSN: 19487185 (2017).
- 9 Johns, P., **Beane, G.**, Yu, K. & Hartland, G. V. Dynamics of Surface Plasmon Polaritons in Metal Nanowires. *Journal of Physical Chemistry C* **121**, 5445–5459. ISSN: 19327455 (2017).
- 10 Yu, K., Devkota, T., **Beane, G.**, Wang, G. P. & Hartland, G. V. Brillouin Oscillations from Single Au Nanoplate Opto-Acoustic Transducers. *ACS Nano* **11**, 8064–8071. ISSN: 1936086X (2017).
- 11 **Beane, G. A.**, Gong, K. & Kelley, D. F. Auger and Carrier Trapping Dynamics in Core/Shell Quantum Dots Having Sharp and Alloyed Interfaces. *ACS Nano* **10**, 3755–3765 (2016).
- 12 Gong, K., **Beane, G.** & Kelley, D. F. Strain release in metastable CdSe/CdS quantum dots. *Chemical Physics* **471**, 18–23. ISSN: 03010104 (2016).

- 13 Alsaif, M. M. Y. A., Latham, K., Field, M. R., Yao, D. D., Medehkar, N. V., **Beane, G. A.**, Kaner, R. B., Russo, S. P., Ou, J. Z. & Kalantar-zadeh, K. Tunable Plasmon Resonances in Two-Dimensional Molybdenum Oxide Nanoflakes. *Advanced Materials* **26**, 3931–3937 (2014).
- 14 **Beane, G.**, Boldt, K., Kirkwood, N. & Mulvaney, P. Energy Transfer between Quantum Dots and Conjugated Dye Molecules. *The Journal of Physical Chemistry C* **118**, 18079–18086 (2014).
- 15 Boldt, K., Kirkwood, N., **Beane, G. A.** & Mulvaney, P. Synthesis of Highly Luminescent and Photo-Stable, Graded Shell CdSe/CdxZn1-xS Nanoparticles by In Situ Alloying. *Chemistry of Materials* **25**, 4731–4738 (2013).
- 16 **Beane, G. A.**, Morfa, A. J., Funston, A. M. & Mulvaney, P. Defect-mediated energy transfer between ZnO nanocrystals and a conjugated dye. *Journal of Physical Chemistry C* **116**, 3305–3310. ISSN: 19327447 (2012).
- 17 Morfa, A. J., **Beane, G.**, Mashford, B., Singh, B., Della Gaspera, E., Martucci, A. & Mulvaney, P. Fabrication of ZnO Thin Films from Nanocrystal Inks. *The Journal of Physical Chemistry C* **114**, 19815–19821 (2010).

Books and Chapters

- 1 **Beane, G.**, Devkota, T., Brown, B. S. & Hartland, G. V. *Handbook of Laser Technology and Applications* 2nd (eds Guo, C. & Singh, S. C.) 9. ISBN: 9781315310855 (CRC Press, CRC Press, May 2021).

Skills

Languages	📖	Strong reading, writing and speaking competencies for English.
Coding	📖	Python, Julia, LabView, L ^A T _E X, MATLAB
Databases	📖	MySQL, PostgreSQL
Web Dev	📖	HTML, CSS, JavaScript, NodeJS
Misc.	📖	Academic research, teaching, data analysis and modelling.

References

Available on Request