

# MENTOR BIOGRAPHICAL SKETCH



## DEAN MACNEIL - PH.D.

National Research Council Canada | Ottawa, Canada

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As a Team leader at NRC, Dr. Dean MacNeil's primary day-to-day operations involve overseeing all major safety tests on battery systems, working with his team to establish research roadmaps, and preparing reports to communicate his team's work to stockholders within NRC. Dr. MacNeil's team has three main focuses: system validation, performance testing, and integration of battery technologies with other systems. Even though Dr. MacNeil's role limits the amount of time he can spend conducting research himself, he finds that the problem-solving and research aspect of his role to be the most rewarding. For graduate students interested in gaining hands-on experience during their studies, Dr. MacNeil emphasizes the importance of building relationships with professionals in your field, and to communicate with your supervisor about prospective careers/opportunities that fits your interests.

Dr. MacNeil grew up in Saint John, New Brunswick, where he started his Bachelor of Chemistry at the University of New Brunswick (UNB) Saint John campus, before moving to Fredericton, NB, to finish his bachelor's degree. Following his time at UNB, Dr. MacNeil joined the research group of Prof. Jeff Dahn at Dalhousie University, where he obtained his Ph.D. in 2001. During his Ph.D., Dr. MacNeil studied the safety of Li-ion cell materials using accelerated rate calorimetry and characterized the thermal behaviour of Li-ion cells, thus improving their safety and design principles. Additionally, Dr. MacNeil and colleagues during his Ph.D. were the first to report a new class of Li-ion cathode materials (known as NMC layered oxides) which proved to be invaluable to the Li-ion industry and currently dominates the Li-ion cathode market globally. Following his Ph.D., Dr. MacNeil joined Duracell (Gillette Advanced Technology group) as a Research Scientist from 2001 to 2005, where he worked on developing battery technology for use in personal products. Dr. MacNeil then returned to academia as a NSERC-funded post-doctoral fellow at the University of Toronto, where he worked on solar quantum dots materials. In 2007, Dr. MacNeil joined the University of Montreal as a NSERC Industrial Research Chair in the department of chemistry, during which he worked on improving the design of low-cost lithium iron phosphate batteries. Currently, Dr. MacNeil is a Team Leader at the National Research Council (NRC) in Ottawa where he manages a team of 12 researchers and technicians focusing on testing, modeling, and validating the safety of commercial battery products through abuse testing.