Svante Arrhenius

(647) 012 – 3456 | arrhens2@mcmaster.ca | linkedin.com/Arrhenius_svante

Highlight of Qualifications

- Enrolled in level 3 of McMaster University's Chemical & Bioengineering Program, eligible for 4-, 8-, 12- and 16-month co-op positions starting May 2028
- Strong experience with chemical process, design and control in class and in automotive industry
- Heavily trained in biology lab experiments and experience researching topics in genetic engineering in laboratory and industry environments

Education

Chemical Engineering & Bioengineering Co-op (BEng.Biosci) **2024 – 2030**

McMaster University

Relevant courses:

- Process Control: Automatic and computer process control, transient behaviour of chemical processes
- Bio-Reaction Engineering: Microbial processes, immobilized enzyme reactions, downstream processing
- Bio separations Engineering: Cell disintegration, adsorption, chromatography, filtration, reverse osmosis

Experience

Process Engineer Intern | *XYZ Automotive Manufacturing Co. Pickering ON* **May – Aug 2027**

- Optimized production processes resulting in a 15% increase in efficiency and 10% reduction in waste
- Implemented quality control measures that improved product consistency by 20%
- Conducted time-motion studies to identify bottlenecks, reducing cycle time by 12%
- Collaborated with cross-functional teams to develop and test new manufacturing techniques, highlighting communication and teamwork skills in a laboratory environment
- Utilized data analysis tools such as SQL to monitor and improve process performance

Research & Development Assistant | *STEMCELL Technologies Inc., Vancouver BC* **May - Aug 2026**

- Recorded detailed notes on cell culture conditions, reagent concentrations, and procedural steps during RNA and DNA extraction experiments
- Utilized software tools such as GraphPad Prism and Excel to analyze qPCR and gel electrophoresis results, identifying trends and anomalies in gene expression data
- Conducted RNA and DNA extractions using TRIzol reagent and spin column methods, ensuring high purity and yield of nucleic acids
- Contributed to the design of experiments to test the efficacy of new cell culture media formulations

Projects

Heat Exchanger | *Process Design & Simulation Course Project* **Mar – Apr 2027**

- Designed and optimized a shell-and-tube heat exchanger for use in the petrochemical industry
- Conducted experimental trials to evaluate heat transfer efficiency and pressure drop, using MATLAB for data analysis and simulation
- Implemented process improvements that increased heat exchanger efficiency by 15%
- Developed a comprehensive project report and presented findings to faculty and peers, demonstrating written and verbal communication skills
- Collaborated with team members to troubleshoot issues and ensure project deadlines were met, highlighting adaptability, critical-thinking and teamwork skills

Extracurricular Activities

Year Representative | *McMaster University Chemical Engineering Society* **Sept 2026 – Apr 2027**

- Represented the interests of 80 students in 2nd year cohort of chemical engineering to society meetings, facilitating interaction between the student body and society leaders
- Organized and managed monthly events, including guest lectures, workshops, and social gatherings, enhancing the academic and social experience of peers

Team Member | *McMaster University Medical Engineering Design Team* **Sept 2024 – Apr 2025**

McMaster University

- Developed a wearable electrochemical sensor for real-time potassium ion detection in sweat, aimed at early detection of hypokalemia in cardiac patients
- Fabricated ion-selective electrodes using valinomycin-doped PVC membranes, achieving a detection limit of 0.5 mM
- Collaborated with a multidisciplinary team to ensure proper integration of peripheral components, showing adaptability and teamwork skills

Skills & Certifications

Software: Python (Matplotlib, NumPy, Pandas), SQL, R, MATLAB, Simulink, Excel, GraphPad Prism, Aspen Plus, MS Office, GSuite, Logger Pro, Autodesk Inventor

Lab Skills: Molecular Cloning, Fluorescence Microscopy, Flow Cytometry, Spectroscopy, Bioseparations, Protein Purification, Bioreactor Operation, Distillation Column Operation

Professional Certifications:

Standard First Aid with CPR-C - *YMCA of Greater Toronto* **Jun 2026**

BSL-1 Biosafety Training Module (Online) - *McMaster University* **Sept 2025**