

Semiconductor Device Engineer

About entX

entX advances innovation through Nuclear Science and Engineering, creating scalable technologies for energy, defence, healthcare, and decarbonisation. From revolutionary power systems like GenX and RHU to carbon capture with producing pre-cursors for life saving medical treatments, we deliver sustainable solutions that transform industries and drive lasting impact.

Position Summary

entX is a pioneering company creating next-generation power and heating solutions for space and defence missions. Our GenX betavoltaic generator delivers long-lasting, maintenance-free electrical power for autonomous defence platforms, enabling them to stay “on station” far longer than traditional systems allow. Similarly, our innovative radioisotope heating unit (RHU) keeps spacecraft and payloads warm during extreme cold, offering a lightweight, cost-effective alternative to bulky batteries or complex plutonium-based heaters. These technologies unlock new possibilities for extended missions—whether it’s keeping a remote sensor alive for months or ensuring a lunar lander survives the harsh temperature swings of the Moon.

We’re looking for a talented, highly motivated Semiconductor Device Engineer with 3–5 years of industry experience to join our team. You’ll work hands-on with advanced semiconductors to refine and scale our GenX products, collaborating across R&D, testing, and product validation. If you’re passionate about turning bold ideas into real-world solutions, eager to grow in a fast-moving environment, and ready to make an impact on critical space and defence projects, entX is where you can take your career to the next level.

Main Responsibilities

- Drive the investigation and optimisation of semiconductor devices for betavoltaic energy conversion, focusing on junction behaviour, charge transport, and current capture to enhance performance, troubleshoot issues, and advance fundamental device understanding.
- Contribute technical expertise to translate device concepts into scalable processes, ensuring manufacturability, reliability, and continuous improvement in fabrication methods, while supporting integration into entX’s next-generation power systems.
- Develop and support design outputs (including FMEAs and other technical documentation) to ensure robustness, traceability, and alignment with manufacturing needs.
- Plan, conduct, and coordinate validation activities to demonstrate that devices and processes meet defined specifications and performance targets.
- Ensure products and processes adhere to applicable regulatory, safety, and customer requirements throughout development and production.
- Identify opportunities for novel device concepts and process improvements, raising potential patents with management and collaborating with patent attorneys on filings.

Key Skills and Experience

Essential

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- Demonstrated experience in the application of semiconductor device physics in an applied or industrial setting.
 - Project collaboration experience in a commercial environment.
 - Must exhibit a high level of analytical and decision-making skills and ability to work in a team environment
 - Good communication skills, both written and verbal.

Desirable

- Experience in handling, manipulation or modification of radioactive isotopes
- Experience in research and translation of research outputs into a commercial application.
- Experience in developing and applying radiation-transport and simulation models.
- Basic understanding of quality, regulatory and safety requirements (i.e. radiation safety, EPA-SA/ARPANSA regulations, quality systems)

Qualifications and Certifications

Essential

- Degree qualification in physics, chemistry, materials science or another relevant technical field
- Be eligible for application to Security clearance level 2, NV 1 (Negative Vetting Level 1) under the Australian Government's Protective Security Policy Framework

Desirable

- Certification in nuclear engineering, radiochemistry or another relevant technical field is highly desirable
- Possession of a current Baseline or NV1 security clearance

Applying

Send your application in the form of a cover letter and resume to info@entx.com.au

Application closes X October 2025

entX seeks to be an employer of choice, a place where people want to work because it is meaningful, offers purpose, and where an individual contribution is acknowledged as part of a team effort. We value our people and recognise the importance of diversity in the workplace. A multitude of perspectives and diversity of thought has a direct and positive impact on productivity and creativity, which in turn can drive employee engagement and enablement allowing staff to reach their full potential.

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