

REFLECTIVE ELECTRICAL ENGINEERING LEARNING (REEL2026)

Building Skills and Professionalism through
Industrial Training

SKILLS



REEL2026
Reflective
Electrical Engineering Learning

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BUILDING SKILLS AND PROFESSIONALISM THROUGH INDUSTRIAL TRAINING



REEL 2026

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*"Building Skills and Professionalism
through Industrial Training"*

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Building Skills and Professionalism Through Industrial Training at Inari Technology Sdn. Bhd.

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My 16-week industrial training experience at Inari Technology Sdn Bhd has been a transformative journey that bridged the gap between theoretical knowledge and real-world engineering practices. I am currently a Semester 6 student pursuing a Diploma in Electrical and Electronic Engineering at Universiti Teknologi MARA Cawangan Pulau Pinang (UiTM Permatang Pauh), and this internship served as an essential platform for me to apply what I have learned throughout my studies. As one of the leading semiconductor companies in Malaysia, Inari specializes in outsourced semiconductor assembly and test (OSAT) services, particularly in radio frequency (RF) and optoelectronic products. The company plays a significant role in supporting global technology supply chains, and being part of such an environment exposed me to high industry standards, precision work, and advanced manufacturing processes.

During my internship, I was assigned to the Testing Department at the P13 factory, where the primary responsibility revolves around ensuring the functionality and reliability of integrated circuit (IC) units. As the name suggests, this department focuses on testing ICs using specialized automated machines before they are approved for further use or shipment. Working in a production environment required strict compliance with cleanliness and safety standards. I was required to wear a green-coloured smock, along with a facemask and white safety shoes, all provided by the company. The colour of the smock also represented the role of workers in the production floor, where interns wore green, technicians wore blue, and operators wore white. This system helped in easy identification of roles and responsibilities within the working environment.



Figure 1: Inari P13 factory in Bayan Lepas, Pulau Pinang

One of the most interesting aspects of my training was working with a variety of advanced testing machines such as HALLABONG, YUJA, MADDUX, NUWA, and BUSTER. Each machine has its own function, configuration, and testing capability, designed to handle specific IC products and requirements. Learning how to operate and understand these machines required both technical knowledge and practical skills. I had to familiarize myself with machine setup, loading procedures, troubleshooting minor errors, and interpreting test results. This significantly improved my technical competency and confidence in handling industrial equipment.



Figure 2: Machine Used to Perform the Testing Process

The testing processes carried out in the department vary depending on the product and requirements. Among the common processes I was exposed to include NFR (No Fault Return), QA (Quality Assurance), RF1, and RF2 testing. Each process serves a specific purpose in ensuring product quality. For instance, QA testing focuses on maintaining product standards and verifying that the IC meets required specifications, while RF testing (RF1 and RF2) evaluates the performance of radio frequency components, which is critical for communication devices. NFR processes, on the other hand, involve re-evaluating returned units to confirm whether they are truly defective or still functional.

Throughout my training, I also encountered several technical challenges that required patience and problem-solving skills. One of the main difficulties I faced was when the testing process took longer than expected due to recurring errors that I was not familiar with. In some cases, every time I loaded the IC unit tray into the machine, the same error would repeatedly appear, preventing the testing process from proceeding smoothly. This situation required the team leader to step in and conduct a detailed inspection. The process known as SUBCAL had to be performed to recalibrate the system, as the repeated errors indicated possible inconsistencies in the testing parameters. Observing this process helped me understand the importance of calibration and how even minor deviations can significantly affect test accuracy and efficiency.

Another challenge I experienced involved mechanical issues within the machine, particularly with the handler or robotic arm responsible for picking and placing IC units during testing. At times, the handler would malfunction or fail to operate correctly, causing interruptions in the workflow. Resolving this issue was not immediate, as it required skilled technicians to diagnose and repair the problem. In some situations, multiple machines experienced similar

issues simultaneously, but only a limited number of technicians were available to solve them. This resulted in delays and required us to wait before testing operations could resume. From this experience, I learned the importance of resource management, teamwork, and maintaining patience in a high-demand industrial environment.

In addition to technical challenges, time management became one of the most critical skills I developed during this internship. I worked in a 12-hour shift environment, which required both physical and mental endurance. For example, while handling the HALLABONG RF2 machines, there were approximately 34 machines in total, managed by only two interns. These machines were also divided between two locations, with 21 machines in Plant A and 13 machines in Plant B. This required me to plan my movement and tasks efficiently to ensure that all machines were properly monitored and operated without delays.

Furthermore, within the 12-hour shift, I had three scheduled breaks of 30 minutes each for breakfast, lunch, and tea. This meant that I needed to manage my working time wisely to ensure that all assigned tasks were completed without affecting the testing flow. Maintaining a steady working pace was crucial, as rushing could lead to mistakes, while being too slow could cause machine downtime and delay production.

Another important aspect of time management was handling multiple machines simultaneously, especially during downtime situations. When a machine stopped due to an error or completed its testing cycle, I needed to quickly attend to it to clear the downtime and resume operation. At the same time, I was also responsible for monitoring other machines that were still running. This required multitasking skills, quick decision-making, and the ability to prioritize tasks effectively. By doing so, I helped ensure that operators could continue testing new IC lots without unnecessary delays.

Through these experiences, I learned the importance of precision, attention to detail, and strict adherence to standard operating procedures (SOPs). Even a small mistake during testing could lead to inaccurate results, affecting product quality and company reputation. Therefore, discipline and focus were always essential. I also gained experience in identifying errors, understanding failure modes, and assisting technicians in troubleshooting machine or product-related issues.

In addition to technical skills, this internship also enhanced my professional development. Working in a real industrial environment taught me the importance of teamwork, communication, and responsibility. I interacted with engineers, technicians, and operators, learning how each role contributes to the overall production process. I also observed how the company emphasizes safety practices, including proper attire, controlled environments, and strict handling procedures to ensure both worker safety and product integrity.

In conclusion, my 16-week internship at Inari Technology Sdn. Bhd. has provided me with valuable exposure to the semiconductor industry, particularly in IC testing processes. The hands-on experience with advanced machines and testing methods such as NFR, QA, RF1, and RF2 has strengthened my technical knowledge and practical skills. More importantly, it has shaped my professionalism, work ethics, and readiness to enter the engineering field. This experience has truly contributed to my growth as a future electrical and electronics engineer.

Authors' Biography



Muhammad Qawiem bin Roslan is a dedicated student currently pursuing a Diploma in Electrical and Electronic Engineering at Universiti Teknologi MARA Cawangan Pulau Pinang (UiTM Permatang Pauh). As part of his academic journey, he began his 16-week industrial training at Inari Technology Sdn Bhd on 23 February 2026 to 30 June 2026, where he is assigned to the Testing Department at the P13 factory. During this period, he gains hands-on experience in handling advanced IC testing machines and performing various testing processes such as QA, NFR, RF1, and RF2. This practical exposure allows him to apply theoretical knowledge in a real industrial environment while enhancing his technical, problem-solving, and time management skills. With a strong interest in semiconductor technology and continuous learning, Muhammad Qawiem aspires to build a successful career in the electrical and electronics engineering field and contribute effectively to the advancement of the industry.



Nurlida binti Ismail had 15 years of teaching at UiTM Pulau Pinang since 2010. She received a Bachelor of Engineering (Hons) (Electrical) in 2008 and Master of Engineering (Electrical – Power) in 2010 from Universiti Teknologi Malaysia.

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