JOSHUA WILFRED

+65 97793335
josh.wilfred96@gmail.com
linkedin.com/in/joshua-wilfred-985ba1176

EXECUTIVE SUMMARY

Dedicated and results-driven Metrology Process Owner with more than 5 years experience in semiconductor manufacturing, specializing in Critical Dimension (CD) measurement and Sorter tool management. Proven track record in implementing process improvements, achieving significant cost savings, and enhancing tool performance. Recognized as the Statistical Process Control (SPC) representative for the department, ensuring early detection of tool drifts and process deviations. Proficient in Lean Six Sigma methodologies, data analysis, and cross-functional collaboration to drive continuous improvement and uphold quality standards.

EXPERIENCE

Global Foundries Pte Ltd — Singapore
Process Engineer - Metrology — *07 / 2019 - Present*

- Appointed as a process owner of **Scanning Electron Microscope (SEM)** Critical Dimension measurement tools (AMAT Verity 1,2,4i & 6i) and **Sorter** tools (RECIF and RORZE)
- Well versed in Verity SEM Measurement recipe creation and algo development for various measurement profiles with a Quality first mindset
- Involve closely with New Product Introduction **(NPI)** team to develop stable measurement recipes for new technology codes for future mass production of devices
- Obtained Yellow belt in **Lean Six Sigma**
- Investigated using Root Cause Analysis and implemented solutions to reduce Manual Assist of measurements, which resulted in **USD450k** yearly excessive labor cost savings
- Work with vendor and manufacturing team to train **AI** to assist the measurements
- Implemented the ATLAS system in metrology (First of a Kind in GF), leading to an overall annual saving of **14k manhours** and a total cost avoidance of approximately **USD100k**
- Support IT and manufacturing team to improve the throughput of sorter tools by reducing the cycle time
- Achieved Recognition as the **Department Statistical Process Control (SPC) representative**
- Liable for the detection of any abnormalities in the SPC to ensure early detection of tool drifts
- Prepare Weekly Tool to Tool Matching reports for various technologies and tool setup performance
- Daily usage of SPC to compare and analyze the measurement data across tools and devices
- Managing runpath to facilitate lower qtimes on measurement tools
- Strong data analysis skills including statistical analysis, data mining and interpretation of metrology data to identify trends, correlations and process deviations
- Perform periodic assessment of Measurement System Analysis (**MSA**) and Gauge Repeatability and Reproducibility (**GRR**) for over 30 SEM tools to ensure measurement tool accuracy
- Qualified SEM tools successfully to run production and approved by **Process Control Review Board**
- Understood various classification of sorters across the fab and did PCRB qualification for 3 sorters
- Work with lithography and etch modules to setup robust complex engineering recipes on CDSEM to improve the process margin and for various other DOEs
- Work with Equipment Engineers and Vendors on Pre/Post Preventive Maintenance and Corrective Maintenance performance, tool release, and process quality checklist.
- Interact with Yield Defect Density Department regarding various Defect highlights. Subsequently, collaborate with MRB team to review the lot dispositions.
- Risk assessment of all MSEM and sorter tools to ensure smooth in line production
- Enhance SOPs and develop BKMs on recipe creations and tool release checklist and for Assistant Engineers to follow closely. Further work on integrating the developed SOPs into Prodct Lifecycle Management (**PLM**)
- Train production technicians on new equipment and process procedures to ensure adherence to quality standards and safety protocols

Accenture Solutions Pte Ltd — Bengaluru, India
Assistant Software Engineer — *06 / 2017 - 06 / 2018*

- Assist in installing, configuring, and upgrading database software to ensure optimal performance and security
- Monitor database systems regularly to ensure uptime, performance, and data integrity.
- Manage user access to databases by creating, modifying, and deleting user accounts as per organizational policies.

- Ensure proper authentication and authorization mechanisms are in place to safeguard sensitive data
- Develop and maintain database backup and recovery procedures to ensure data availability and disaster recovery preparedness. Test backup and recovery processes regularly to validate their effectiveness

EDUCATION

Nanyang Technological University — **Singapore**
Master of Science in Manufacturing Systems and Engineering — *08 / 2018 - 06 / 2019*
- GPA : 3.4/5
- Relevant Modules: Advanced Manufacturing Processes, Prototyping and Rapid Prototyping, Quality Engineering

Karunya University — **India**
Bachelor of Technology in Electronics and Communication Engineering — *07 / 2013 - 06 / 2017*
- GPA : 7.84/10
- Relevant Modules: Embedded Systems, Digital Signal Processing, Communication Systems, Digital Electronics

SKILLS

- **Data Analysis** - Microsoft Excel, Power Bi, JMP
- **Presentation** - Microsoft Powerpoint, Canva
- Lean Six Sigma
- Statistical Process Control (SPC)
- Measurement System Analysis (MSA)
- Gauge Repeatability and Reproducibility (GRR)
- SOP and BKM Development
- **Software Programming** - Proficient in C, C++, HTML, CSS
- **Soft Skills** - Problem solving, detail oriented, self motivated
- **Language Skills** - Tamil as mother tongue, fluent English

ACHIEVEMENTS

- Spotlight award for contributing to the OnePID project which improved the cycle time for route creation by 75% — *05 / 2025*
- Appreciation award recipient for Developing recipes to assess intricate structures pertinent to investigating yield loss, continuous improvement on five times — *2021 - 2025*
- **"Innovation and New Tech Excellence"** Award for 3D Printing Part Qualification — *05 / 2022*
- PEACE nominee for implementing new setup to reduce the setup waiting time — *03 / 2023*
- **"Innovation and New Tech Excellence"** Award for ATLAS Setup Map AI classification — *11 / 2023*

CERTIFICATIONS

- **Lean Six Sigma Foundations**, PMI — *02 / 2025*
- **JMP Training for Statistics and Visualization**, Udemy — *02 / 2025*
- **Coaching for Continuous Improvement**, PMI — *01 / 2025*
- **VeritySEM 6i Advanced Application**, AMAT PDC — *05 / 2024*

LEADERSHIP AND CO-CURRICULAR ACTIVITIES

- Member of IETE (Indian Electronics and Telecommunication Engineering)
- Won District, Divisional and State Level Championships in Swimming
- Participated in Tamil Nadu Gymnastics Championship
- Actively involved in the special camp organized by National Service Scheme

HOBBIES

- Trekking and Travelling
- Swimming
- Gardening
- Boxing
- Fitness Activities
- Cooking