Ho Yu Da

Skills Profile

- **Accomplished scientist/engineer** with 9 years of experience in the semiconductor and publications in high impact journals.
- **Multidisciplinary background** well versed in wafer fabrication, assembly packaging and failure analysis. Strong understanding of physical science as well as materials.
- **Proven management experience** demonstrated in key contributions as product engineer responsible for sub team strategic development and technology transfer of over 100+ new products.

Professional Experience

Senior NPI operations Engineer Apr 2017 - Present

Kulicke & Soffa, Singapore

Key Contributions:

- Developed test process for all advance packaging equipment ranging from conventional die attach to thermo compression bonding.
- Innovate semi-automated troubleshooting guide for technicians' self sustainability
- Initiated and scripted automated VBA process monitor, enabling synergist between cross functional team with data driven analysis.
- Accomplished quick turn of legacy product revival and streamlined documentation control.
- Tableau big data decision making and matlab based graphical analysis.
- Analyze servo mechanical performance and Fourier transformed thermal drift filtering for machine performance.
- Machine learning for predictive analytics on manufacturing failure.
- Developed team's capability on Microsoft Azure platform for end to end deployment

Product Engineer Jun 2014 - Mar 2017

Micron Semiconductor, Singapore

Key Contributions:

- Responsible for product development team managing of over 100+ new products introduction to date.
- Managed network level fabrication site strategy and technology transfer mapping based on long term demand.
- Designed and managed new products that were first-to-market memory under automotive temperature grade. Enabling marketing to Tier 1 provider opening million dollar opportunity.
- Initiated, formed and led team of engineers to evaluate thermal junction performance. Incorporated methodology to suit current test hardware.
- Designed and conducted needs analysis of clients from the automotive industry and aligned operational resources to meet business objectives.
- Advised business units on product strategy based on a multi-disciplinary approach, providing insight from CAD design and lithography limitation up till assembly packaging

process, failure analysis and metallurgy improvement for board level solder joint performance.
- Aligned methods for bill of material, process of records and tool of records to improve operational efficiency.
- Mentored and conducted training for new engineers under sub team and lead department portfolio extension of product line.

Graduate Researcher Aug 2010 - Jul 2013
National University of Singapore

Key Contributions:
- Conducted research on spin-charge transport in graphene hetero-structures and functionalized graphene.
- Published work in high impact journals such as Nature Communications.
- Programmed LabVIEW for data acquisition automation using National Instruments hardware for both DC and AC electrical measurement.
- Installed and maintained a customized ultra low vacuum Molecular Beam Epitaxy system for the laboratory.
- Extensive experience in ultra low temperature cryogen free magnet systems with lock-in amplifier electrical tester.
- Designed and built customized probe tester for chip socket mounting.
- Deep knowledge in hand-on design/fabrication of thin film nano-electronics device fabrication including electron beam lithography, reactive ion etcher, thermal evaporator, wire bonding and solder pasting.

Undergraduate Researcher Aug 2009 - Jul 2010
National University of Singapore

Key Contributions:
- Conducted research on strain engineering in graphene nano-ribbons via helium ion microscopy.
- Conducted a USD $2M cross-department project utilizing Helium Ion Microscopy.
- Presented work at a technology showcase to raise industrial partnership venture funding.
- Conducted state-of-the-art research such as bombarding helium ions at glancing angles into silicon substrate which induced nanobubbles formation under graphene. Locally strain engineered graphene to cause semi-metal to insulator transition.

Undergraduate Researcher Aug 2008 - Jul 2009
Infineon Technologies AG, Singapore

Key Contributions:
- Conducted research on interconnected integrated circuits.
- Reviewed and evaluated existing techniques for interconnecting micro processing chips.
- Proposed techniques and material selections to improve efficiency during industrial production.

Education

M.Sc. Physics Aug 2010 - Jul 2013
National University of Singapore

Dissertation:
- Atomic Number Dependence of Spin Hall Effect

B.Eng. (Second Upper Hons.) Material Science & Engineering
B.Sc. (Second Upper Hons.) Physics Double Degree Aug 2005 - Jul 2010
National University of Singapore

Dissertation:
- Strain Engineering in Graphene Nano-ribbons via Helium Ion Microscopy

Scholarships

National University of Singapore Research Scholarship Aug 2010 - Jul 2013

Singapore Press Holdings Vendor's Scholarship Aug 2006 - Jul 2010

Publications

- *An Innovative Way of Etching Mos2: Characterization and Mechanistic Investigation*, Nano Research, 2013, 6(3): 200–207.
- *Giant Spin Hall Effect in Graphene Grown by Chemical Vapour Deposition*, Nature Communications, 2014, 5: 4748.
- *Overcoming Technical Challenges for Developing HDS eMMC Product*, 21st Micron STSBE MSB Technical Seminar, 2015.
- *Thermal Performance of High Thermal Conductivity BOM in Stack Die BGA(COB)*, 21st Micron STSBE MSB Technical Seminar, 2015. Winning project for BCT technical forum 2016.

Competencies

Surface Characterization: AFM, EFM, SEM, Raman, FTIR, EDX/AES, SIMS, XPS/ESCA.
Electronics fabrication: Front-end semiconductor manufacturing. (lithography, thermal evaporation, sputtering, etc) Back-end semiconductor package assembly. (chip mount, plasma, wire bonding, etc)
Electrical measurement: Standard lock-in technique, Standford Research Systems, various Keithley source and measurement equipment, LabVIEW.
Hardware experience: Setup and installation of Molecular Beam Epitaxy (MBE) for mono layer growth, low temperature (~4K) cryogen free magnet system, Cryogenic Limited system with base temperature at 2K and magnetic field up to 16 Tesla. Set up, calibrate and qualify industrial die attach and thermo-compression machines for multiple OSATs.

Software: R studio, Python, Design CAD, VBA, LabVIEW, JMP, Cadence, Autodesk, Origin, C++, Matlab, Tableau
Languages: English (Professional), Mandarin (Professional)

Leadership Experience

- Mentor, New Hire Training, Micron 2016 - 2017
- Supervisor, Assistant Engineer Guidance, Micron 2015 - 2017
- Project Manager, Assembly Central Engineering, Micron 2014 - 2017
- Section Commander, 1st Guards, Singapore Armed Forces 2003 - Present
- Trainer, Rock Climbing Club, Maris Stella High School 2000
- Assistant Coach, Life Saving Club, Maris Stella High School 1999

References available on request.