



CALL FOR APPLICATION

PhD Scholarship - Industrial Postgraduate Programme (IPP)

Industry:	Electronics
Company:	Infineon Technologies Asia Pacific Pte Ltd
Website:	www.infineon.com
Contact:	Dorothea Bensch-Pannenbaecker
Email:	Dorothea.bensch-pannenbaecker@infineon.com
Company Profile:	<p>Infineon Technologies provides innovative semiconductor and system solutions that address three central needs of modern society, namely energy efficiency, mobility and security. Infineon's success with customers stems from its strategic focus on innovation, its leading position in the global market, and its high performance as an organisation of some 35,000 employees worldwide.</p> <p>At Infineon, its people are assured of excellent career opportunities as the organisation offers the full value chain from R&D to manufacturing. The company has in place a development framework consisting of different learning roadmaps, and Infineon offers both managerial and technical career paths to maximise the potential of its people so that they can contribute at their best. Scholars have the opportunity to gain useful work experience while studying, through Infineon's comprehensive internship programme covering real business projects, formal orientation, in-house training, dialogues with the management and more.</p> <p>How Infineon contributes to a better future</p> <p>...with its entrepreneurial spirit</p> <p>Through creativity and commitment Infineon creates value for its customers, employees and investors. It understands how semiconductors increase the system performance of modern technology, enabling solutions that will shape our lives today and tomorrow. Developed with passion and manufactured with precision, every single product proves its' will to succeed. This is what makes Infineon a reliable partner and helps its customers to become even more successful.</p> <p>...by accepting responsibility for society</p> <p>Infineon combines entrepreneurial success with responsible behaviour. Efficient use of energy, environmentally-friendly mobility and security in a connected world – it solves some of the most critical challenges that society faces while taking a conscientious approach to the use of natural resources.</p> <p>...with a unique team</p> <p>Men and women from more than 90 countries make Infineon a successful international company – with their skills, their enthusiasm and the courage to challenge the status quo and open up new horizons. Since the semiconductor was invented, it has helped shape the future – every single day.</p>



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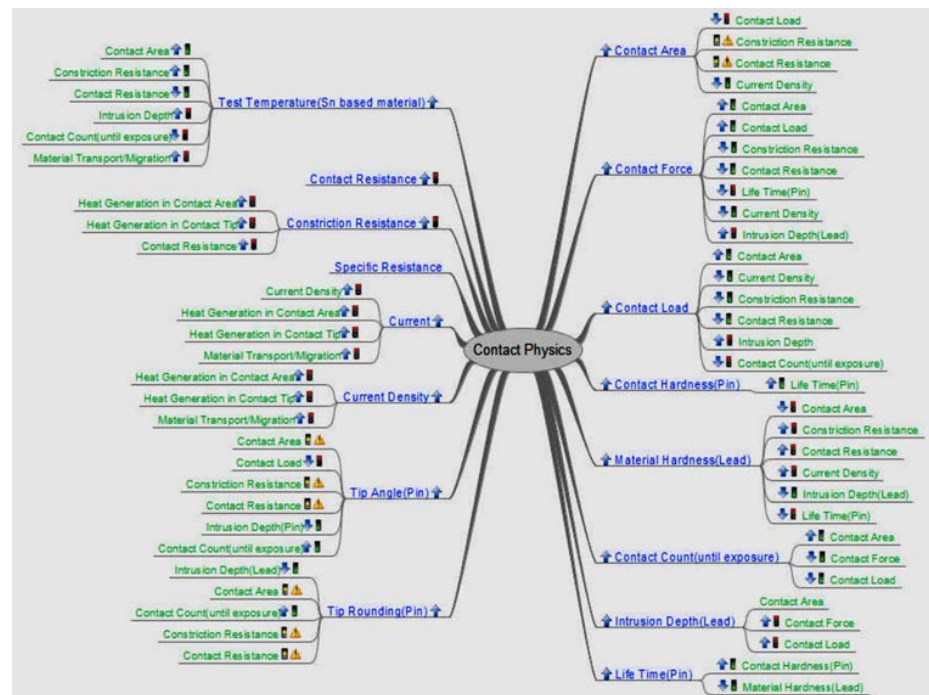
IPP Trainees Position:

Project 1

Analysis of Intermittent Contact Failure in IC Packaging for Energy and Environmental Applications (2016 – 2020)*

Supervisor

Asst Prof Zhou Kun



Field of Study

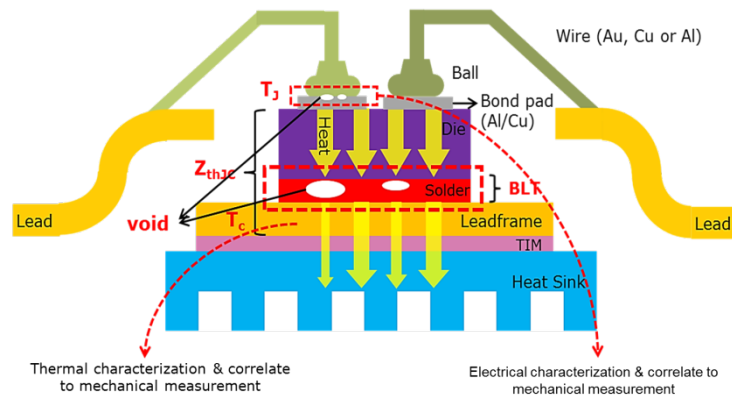
Mechanics, Material Science, Engineering, Physics

Project 2

Thermal & Electrical Characterizations for FOL (Front of Line) Process Functionality Evaluation (2017 – 2021)*

Supervisor

Assoc Prof Zhou Kun



Field of Study

Mechanics, Material Science, Engineering, Physics

Project 3

Design of a Low Supply and Power Die Temperature Sensor with High Temperature Precision and Robust against Possible Supply Noise Disturbance (2017 – 2021)#

Supervisor

TBC

Students will get to design this module with very challenging state of the art design parameters for the Die temperature sensor such as ...

- › Supply voltage of less than 1V in which conventional design technique cannot be used
- › Overcoming deep sub-micron process related challenges as in leakage and poorer transistor's performance
- › Maintaining challenging temperature readout accuracy of less than 0.5 degree at an automotive temperature range of -50 degree to 180 degrees
- › Allowing multiple module placements with small footprint and in different locations of the chips for thermal monitoring (which is gain popularity especially for big chip as in micro-controller).
- › Designing for robustness against possible influence of substrate and supply noise disturbance.
- › Catering for low current consumption for battery powered operation.
- › Enabling fast conversion speed for temperature readout

Field of Study

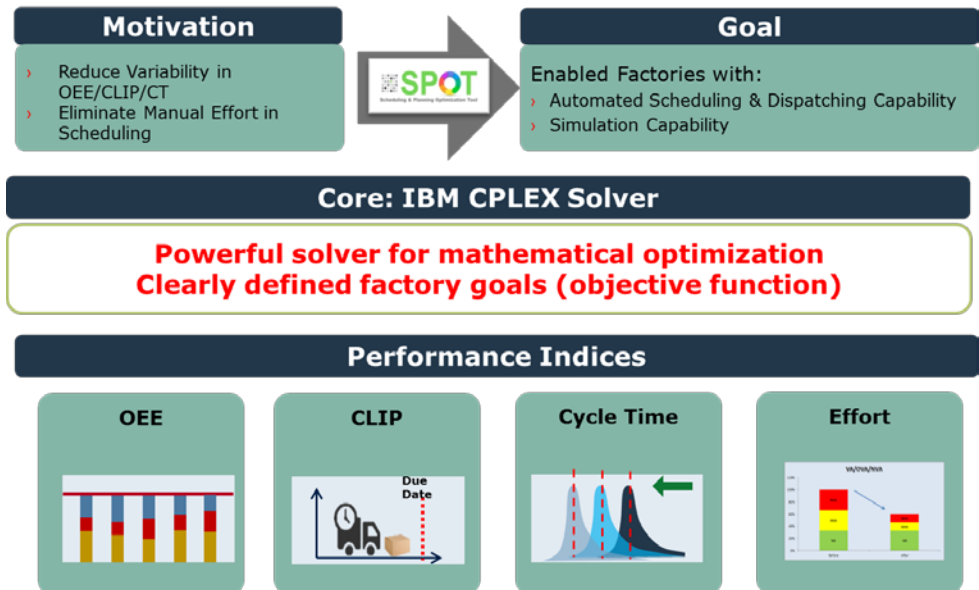
Mechanics, Material Science, Engineering, Physics

Project 4

Implementation of a Complex Mathematical Solver with Automated Scheduling & Dispatching and Simulation Capabilities for Global Factories at IFX (2017 -2021)#

Supervisor

TBC



- › Learn and work alongside experts in the field of Operations Research from FE and Corporate Supply Chain, Business Services
- › Support the implementation of Smart Factory concept with a new Scheduling & Planning Optimization tool in other BE locations globally
- › Learn more about a complex mathematical solver with automated Scheduling & Dispatching and Simulation capabilities

Field of Study

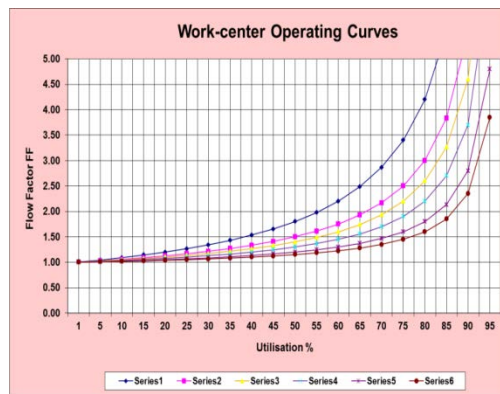
Mathematics and Engineering

Project 5

Optimise Semiconductor Backend with Simulation in Resource Planning & WIP Flow Management (2017 – 2021)#

Supervisor

TBC



Sample Questions to Analyze Data

Where are we operating on the OC curve?

What are the 4M variability?

How can we increase the throughput of this line?

What is the impact if I add in 1 tool to this line?

If I add in technicians, will this improve the line?

Business Case

- 1) Currently, we use static planning when accepting demand/forecast. (Weeks to months horizon).
- 2) This does not take into consideration real life environment with variability due to deviations (equipment down, loading or 4M Machine-Man-Material-Method)
- 3) Thus, we would need to use simulation to enhance/optimize existing resource planning tool, taking into consideration variability mentioned in (2) above.
- 4) We would also like to use simulation for 4M optimization (invest, staffing, inventory level, processes decisions).

Students will get to

- › Learn existing simulation tools (Simul8, Autosched, Anylogic), planning tools and data-sources used in Infineon operations
- › Make simulation model of an IFX backend production, from assembly to test operations.
- › Make scenarios study focusing first on enhancing /optimising resource planning, then on 4M variability.

Field of Study

Mathematics & Engineering

General Requirements:

- › Singapore Citizens/ PRs only
- › Eligible for PhD studies with a good Bachelor degree (at least 2nd Upper Honours)
- › Strong analytical and problem solving skills
- › Self-motivated individual with excellent interpersonal, oral and communication skills
- › Strong passion in the areas of the project

If interested, please send in your resume to Li En (lien.fong-ee@infineon.com) indicating the project that you are applying for.

*Pending EDB Approval # To file for Approval