



CALL FOR APPLICATION

PhD Scholarship - Industrial Postgraduate Programme (IPP)

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| 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 ...with its entrepreneurial spirit</p> <p>Through creativity and commitment Infineon creates value</p> |

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.

...by accepting responsibility for society

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.

...with a unique team

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.

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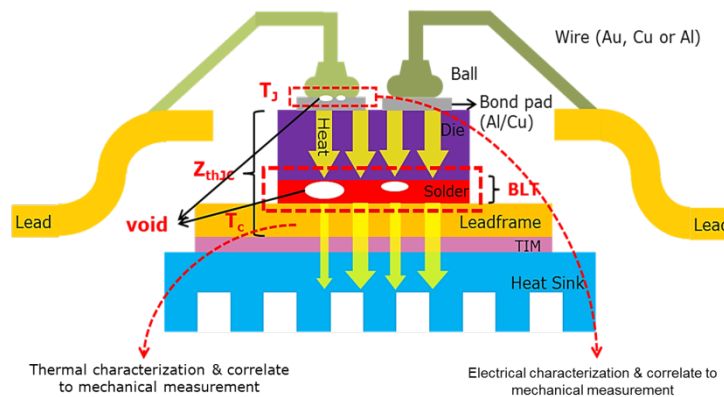
IPP Trainees Position:

Project 1

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

Supervisor

Asst Prof Zhou Kun



Field of Study

Mechanics, Material Science, Engineering, Physics

Project 2

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
(Masters)

Project 3

Influence of High Frequency Voltage Stress in Electronic Package#

Supervisor

TBC



Air and solid insulations are two critical means to deliver adequate electrical insulation; with the increase in instances of high-frequency voltage stress on power/driver devices, it is important to understand its influence towards current material used for semiconductor packaging.

Project scope covers,

- › Development of high frequency-Voltage load tester.
- › Design of the test bench capable test up to 1MHz with 16kVrms. (GaN and SiC frequency range)
- › Determine the failure mechanism.

Field of Study

Electrical & Electronics Engineering, Physics

Project 4

Influence of High Frequency Voltage Stress in Electronic Package (2)#

Supervisor

TBC



Air and solid insulations are two critical means to deliver adequate electrical insulation; with the increase in instances of high-frequency voltage stress on power/driver devices, it is important to understand its influence towards current material used for semiconductor packaging.

Project scope covers,

- › Investigate influence of Mold Compound Tg (Glass transitional temperature) at surge pulse, 50Hz (and/or up to 1MHz) in temperature range from -50 ° C (if not possible from 25 ° C upwards) to 150 ° C.
- › Design of the test bench capable test up 16kVrms at 2bar pressure and 50Hz with temperature conditioning capability.

Field of Study

Material Science, Physics

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

To file for Approval



Influence of High Frequency Voltage Stress in Package



Behaviours of Air and Solid Insulation



Background Information

Air and solid insulations are two critical means to deliver adequate electrical insulation; with the increase in instances of high-frequency voltage stress on power/driver devices, it is important to understand its influence towards current

Opportunities

- › Learn and work alongside and guidance by field of expert.
- › Implementation of test setup and methodology development.
- › Putting Theory into Practice and vice versa.

Who are we looking for?

- › Field of Study: Material Science, Electrical and electronics, Physics
- › Strong analytical and problem solving skills
- › Self-motivated individual with excellent interpersonal, oral and communication skills
- › Strong passion in the development of material and electrical characterization methodology