CALL FOR APPLICATION

**PhD Scholarship - Industrial Postgraduate Programme (IPP)**

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<tr>
<th>Industry:</th>
<th>Electronics</th>
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<td>Company:</td>
<td>Infineon Technologies Asia Pacific Pte Ltd</td>
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<tr>
<td>Website:</td>
<td><a href="http://www.infineon.com">www.infineon.com</a></td>
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<tr>
<td>Contact:</td>
<td>Fong Li En</td>
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<tr>
<td>Email:</td>
<td><a href="mailto:Lien.fong-ee@infineon.com">Lien.fong-ee@infineon.com</a></td>
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**Company Profile:** 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.

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.

**How Infineon contributes to a better future**

...with its entrepreneurial spirit
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.

...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.
CALL FOR APPLICATION

PhD Scholarship - Industrial Postgraduate Programme (IPP)

IPP Trainees Position:

Project 1  Effect of High Frequency and High Voltage Stress on Epoxy Mold Compound (2019-2023)

Supervisor  Prof Gan Chee Lip

4 years ago, Infineon Industrial Power Control & Power Management and Multimarket business unit initiated a new technology and package development in driver IC; and started a new chapter in high voltage reinforced isolation driver product series. This new technology allows signal and energy transfer over a galvanic insulating barrier separating two ground-voltage domains. The chip/package system offer reinforces insulation, which according to IEC and VDE standards require the highest insulation class. To fulfil such stringent requirements in standard, the chip/package system had to be redesigned and defined, which includes a new package outline, new epoxy mold compound, interconnect control and internal layout design for secondary isolation.

To-date the Driver IC’s high voltage’s testing capability is up to 1kHz in switching frequency and this is far from the switching frequency of GaN and SiC power MOSFET that is offering >1MHz. This also implies that current state of the art Driver IC package and bill of material selection is designed and chosen based on current testing capability. This PhD research project is focused on understanding the material behaviour of epoxy mold compound when subjected to high frequency and high voltage stress.

Scope:

1. Hands-on to complete test bench transfer and setup from IFX Germany counterpart. The tester operating voltage is up to 16kVrms, 2bar pressure with test switching frequency up to 1MHz with 25C to 150C testing temperature coverage.
2. Systematic problem solving approach through electrical characteristic and failure mechanism including partial discharge and space-charge through electrical signal and failure analysis. Statistical analysis is a must for such analysis.
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<th>Field of Study</th>
<th>Material Science Engineering, Engineering</th>
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<tr>
<td>Project 2</td>
<td>Development of Robust 3D Point Cloud Signal Processing For Lidar(2019-2023)*</td>
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<td>Supervisor</td>
<td>TBC</td>
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Point cloud processing in Lidar automotive applications is an emerging field. The point cloud is obtained from a Lidar sensor and is already preprocessed by filtering, thresholding and histogram. Ground and objects in 3D need to be segmented, tracked and classified under normal and adverse weather conditions.

**Scope:**

1. Research on state of the art methods for 3D point cloud processing.
2. Investigate on noise and weather mitigation.
3. Implement robust ground removal, segmentation and tracking.
4. Verify with large and diverse datasets
5. Implement and optimize for embedded FPGA or MCU
6. Implement classification based on deep learning and optimize for embedded
7. Optimise deep learning model by using hyper parameter tuning using meta machine learning
8. Perform actual vehicle level data collection and test to improve performance.

**Objectives:**

1. Develop robust and optimize 3D point cloud signal processing for segmentation and tracking
2. Develop classification and self learning models.
3. Implement and test on FPGA or MCU

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