Additional Vacancy

Recruiting of

Postgraduate [Master in Science (M.Sc.)] Candidate

Collaboration Research Project

Between

Universiti Sains Malaysia (USM) and GF Technology Sdn Bhd

We are accepting applications if you are graduating soon (Q3 or Q4 of 2023).

Research Title:

Radio-Frequency Sputtered Laser-Optics Coating with High Laser Induced Damage Threshold (LIDT)

Research Synopsis:

Laser technology is essential for different engineering applications such as optoelectronic, communication, military, biomedical, and automotive. Therefore, laser optics is an important component that is needed to ensure a well functional device and module can be operated. However, the laser may induce damages to the laser optics which consists of substrate and coating stacks. The damages significantly degrade the performance of the laser components and eventually cause catastrophic failure. Hence, the threshold of laser radiation that may induce damages to a laser optics must be identified. This threshold is termed as laser induced damage threshold as defined by ISO 21254 as "the highest quantity of laser radiation incident upon an optical component for which the extrapolated probability of damage is zero". According to this standard, different methods of testing can be used depending on the applications of the laser components. In general, the threshold is affected by type of laser (pulsed or continuous wave laser). With Pulsed laser, factors such as maximum laser fluence, laser wavelength, pulse repetition rate, pulse duration, laser spot diameter / laser spot area, and pulse shape are critical parameters that can affect the threshold value. For continuous laser, besides maximum laser intensity, laser wavelength, pulse shape, and sport size need to be evaluated. This reliability issue can be overcome by depositing an appropriate coating on the substrate of laser component. There are different types of coating and deposition methods that had been reported. In this work, radio-frequency sputtering will be used as opposed to other more expensive and time consuming methods such as Ion Beam Sputtering and Atomic Layer Deposition methods and yet aiming to produce a comparable level of LIDT. In order to produce a laser resisted coating, an intermediate layer between the coating and substrate will be introduced to enhance the adhesion to the substrate and to reduce absorption by the laser.

Duration: 1 – 2 years (Full-time Research Mode)

Research Venue:
- 10%: School of Materials & Mineral Resources Engineering, Engineering Campus, Universiti Sains Malaysia, Malaysia.
- 90%: GF Technology Sdn Bhd, Bayan Lepas, Penang.

Introduction to Company: **GF Technology** is fully own by local and fully locally growth by 2 Technologists and entrepreneurs. We started off as a small injection company with 10 work force and until today we already growth to 300 workers with 2 manufacturing sides.
GF Technology is specialist in Vacuum Technology and produces high quality plastic lenses and filters for multiple industries.
We welcome young talented people to come and join us and help to growth our company to international level.

Funding Company: GF Technology Sdn Bhd
Plot 108, Kawasan Perindustrian Bayan Lepas 4,
Hilir Sungai Keluang 5, Mukim 12, Daerah Barat Daya,
11900 Bayan Lepas, Pulau Pinang, Malaysia

General Requirement:
- Malaysian ONLY
- Team player with critical thinking
- Good written and oral communication skill in English
- Hard working and independent

Academic Qualification: Bachelor's Degree (CGPA > 3.00)
Preferrable graduated from the following discipline:
- Applied Sciences (Physics)
- Materials Engineering and Materials Science
- Electronic Engineering
- Other related disciplines

Benefit:
(1) Monthly Stipend = RM 2500/month for maximum 2 years
(2) Fully cover tuition for maximum 2 years (RM 3700/semester x 4 semesters) and Thesis Examination fees (RM 750)

Interested Candidate May Contact:

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