INTERDISCIPLINARY GRADUATE SCHOOL
GRADUATE RESEARCH PROGRAMMES

IGS Scholar's Name: Ng Chee Seng
Research Centre: ERIAN

1. **Your current employment details (Designation, name of company, country and scope of work)**

   I am currently working as project officer at MAE, NTU Singapore. The scope of the research work involves investigation on fuel cell related matters.

2. **What motivates or trigger you to pursue a doctorate?**

   To pursue a doctorate is part of my dream or target since when I was small. I am always interested in doing research or experimental work and enjoyed in applying science to real life.

3. **Why or how did you decide to apply to IGS or the interdisciplinary route of research?**

   IGS was introduced and recommended to be by my professor. At that time, IGS was just started and it offered interdisciplinary type of research that may broaden my research and technical expertise in various field.

4. **What is your thesis about?**

   The work of my thesis involves investigation of ionic transport properties of solid oxide electrolyte material and distinguish between bulk transport and grain boundary transport properties.

5. **Why did you choose this topic and how does it benefit people or industries globally or internationally?**

   The initial idea is to research on solid oxide fuel cell, which is a high efficiency energy conversion device but it is not widely implemented at this moment. The debate on transport properties of solid oxide electrolyte in literature has motivated me in choosing the topic. Greater understanding in transport properties of electrolyte would help in designing the better device in future, therefore advancing the fuel cell industry further.

6. **What kind of interaction did you have in IGS? How did that help you?**

   IGS provides opportunity to interact with different IGS student at different lab. Having small discussion and interaction with IGS student working at different labs enlarge the network of resource and support for research work.

7. **What are the challenges you faced during the candidature and how did you overcome it?**

   One of the experiment task is to design and build a chip-scale heating stage. Due to inexperience in this field, the first design and build has a lot of problems and does not work as expected, such as delamination problem, oxidation of heating element, etc. After proper research into the problem and solution, the next design is proposed and build, which also has some problems that is not discovered in the design, such as leakage current, etc. This design process was repeated, with each iteration of design, produced better solution, which eventually solve the problem.

8. **What was your proudest moment or fondest memories over the years of candidature? E.g awards, overseas conference, patent, published papers, etc.**

   The experiences in United States while visiting University of California, Merced is quite memorable, as I have to chance to work with different people, in different environment and experiencing different working culture, besides visiting various parts of the United States.

9. **What do you think are the attributes for PhD students to successfully go through the 4 years?**

   Always think ahead of time and plan realistically. In the case of experimental work, preparation of the materials, instrument required and allocation of sufficient time for the experiment. For examination matter, set aside time for studying and revision.

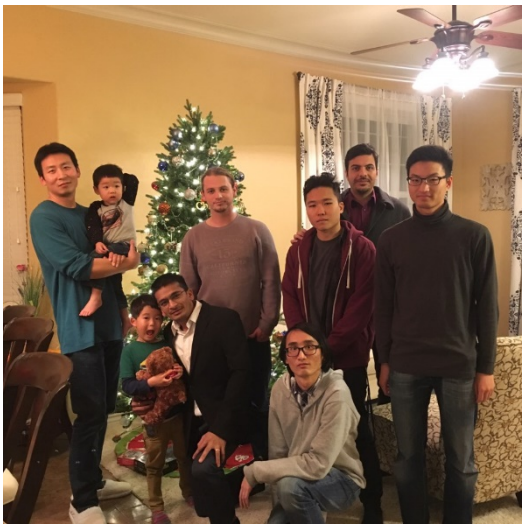
10. **Please share 1 key motivational/ key take away message with your juniors?**

    "Work hard and don't give up". There are always times where things do not work as planned or expected. Take that as a chance to learn and improve yourself until you could overcome the difficulties.

11. **How does it feel like when you received the scholarship offer?**

    Receiving the scholarship offer provides a stable financial support for my living expenses. This allows me to have more time, more focused on studying and research activities, therefore much productive in research work.

12. **Share with us some memorable photos you've taken with 1 line description of each photo. (e.g. Overseas conference, interactions in IGS, etc)**



Christmas gathering with supervisor and group member in UCM

13. **What will you miss after graduating?**

    The thing that I would miss is the chance of having friendly technical discussion with my colleagues over a coffee table, sharing ideas, finding solution to problem etc. I would also miss the chance of using the familiar equipment and sophisticated instrument in the lab.

14. **What is your next adventure / challenge or any plans for the future?**

    My next adventure would be continuing the current project I have been working on. Future's plan would be to work in or contribute in development of alternative energy related industries.

15. **Is there anything you want to say to your family, supervisors, mentors, friends or anybody?**

    I am grateful for those who have supported me during my Ph.D. journey. I did learn a lot from them and appreciate all the little helps and cares. Research work may be tough, but you all made this experience much enjoyable.