

IGS Scholar's Name: Xuan Fengyuan

Research Centre: ERIAN

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

I am currently applying for a postdoc position in National University of Singapore. It is in Centre for Advanced 2D Materials. I would like to stay in academic field in the future.

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

I like physics very much and want to do research work. Obviously pursuing a doctorate is the way.

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

Single disciplinary research is too narrow. Nowadays interdisciplinary (physics, chemistry and biology) research has shown great possibilities. I believe interdisciplinary route of research will bring people more and more surprises in the future.

4. What is your thesis about?

It is about developing a set of theoretical models to explain the electromagnetic response of metal nanoparticles. The theoretical methods of Hartree-Fock, Random Phase Approximation have been widely used in nuclear physics, atomic physics, condense matter physics and chemistry.

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

Personally, I am more interested into the theoretical research rather than experimental work. Metal nanoparticle not only is theoretically interesting, but also has great applications, like in thin film solar cells. My theoretical and computational work on core-polarization corrected Random Phase Approximation has contributed to the understanding of the valence-core polarization interaction in metal cluster physics.

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

Actually IGS has been organising lots activities for the graduate students. We had great fun. I was able to know more friends in different research field.

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

The core-polarization model we proposed first time does not work so well. I had lots of discussions with my supervisors and finally got through it.

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

The moment when my first paper was published, I felt I am really a researcher.

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

A healthy lifestyle. PhD work is important, but doing sports, going parties with friends are more important.

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

You will find the difficulty you are facing now not as difficult as you thought when you look back a few years later. So relax.

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

It feels great. Singapore is an international place and I like summer. NTU is a perfect choice for me.

12. What will you miss after graduating?

The beautiful campus of NTU and my dear friends here.

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

I plan to change the research direction. I would like to try something new, studying 2D materials instead of staying in the field of cluster physics.

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

I would like to thank my parents and friends for their support during the last five years. My supervisors, Claude Guet and Su Haibin, and mentor Zhang Baile provided me inspiring and patient guidance for the PhD work. I appreciate that.