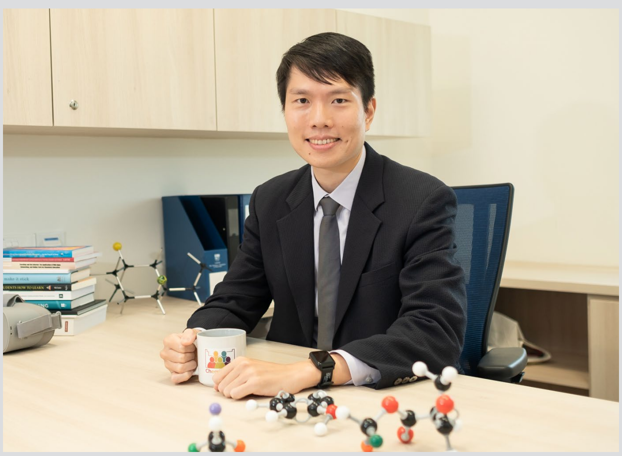
Young Career Focus: Dr. Fun Man Fung (University College Dublin, Ireland)

Background and Purpose. SYNFORM regularly meets young up-and-coming researchers who are performing exceptionally well in the arena of organic chemistry and related fields of research, in order to introduce them to the readership. This Young Career Focus presents Dr. Fun Man Fung (University College Dublin, Ireland).

Biographical Sketch



Dr. F. M. Fung

Fun Man Fung studied chemistry at the National University of Singapore (NUS), where he received his doctorate in 2020 under the supervision of Prof. Sam Li Fong Yau.
Prior to that, he received a bond-free scholarship from BASF, Germany to study for his Master of Science (Industrial Chemistry), jointly conferred by Technical University of Munich (Germany) and NUS. Before this, he earned his undergraduate Honours degree at NUS, supervised by Assoc. Prof. Lam Yulin, and received the NUS Society Gold Medal for Outstanding Achievement. Dr. Fung also earned a Certificate in Environmental, Social, and Governance (ESG) from the Singapore Management University (SMU).
He is the co-editor of two books: [1] 10 Things You Must Know About the International Chemistry Olympiad (IChO) and [2] Technology-Enabled Blended Learning Experiences for Chemistry Education and Outreach. He was elected to serve on the IChO steering committee for two terms (2014–2018). Since 2022, Dr. Fung has been elected Council Member of the Singapore National Institute of Chemistry (SNIC), and he represented SNIC on the IUPAC Committee on Chemistry Education as National Representative (2020–2023). Dr. Fung currently serves as a member of the Editorial Advisory Board at the *Journal of Chemical Education* (ACS Publications), and of the Early Career Advisory Board of *JACS Au*, and is Associate Editor of *Chemistry Teacher International* (IUPAC & EuChemS).
He received the 2024 Thieme Chemistry Journals Award, 2023 NUS High Inspiring Research Mentor Award, the Global Young Academy Membership (2024–2029), 2019 YSEALI Professional Fellowship and the 2021 Study of the United States Institutes (SUSI) Program Scholarship hosted at the Maureen and Mike Mansfield Center, University of Montana (USA). Dr. Fung is a member of the ASEM-DUO Wallonia-Brussels Fellowship Programme, the Asian Universities Alliance (AUA) Scholars Award Program, and the CAS Future Leaders™ Program. He is the Founding Chair of the American Chemical Society Singapore Chapter.
In 2024, he was appointed Assistant Professor at the School of Chemistry, University College Dublin, Ireland. His group currently studies how the application of learning sciences and educational technology helps learners learn better.

INTERVIEW

SYNFORM *Which field of organic chemistry are you interested in the most and why?*

Dr. F. M. Fung Years ago, as a freshman undergraduate at the National University of Singapore Chemistry, I was exposed to all fields in the chemical sciences. But only organic chemistry hit me with the feeling of "*U Got it Bad*". I was smitten by the associations with our lives and then took many advanced classes related to organic chemistry synthesis, including spectroscopic techniques. When I started teaching at the university, my interest towards the field of chemistry education in organic chemistry piqued. If I can personify "ChemEd in Orgo Chem", I want to say to #ChemEd: "*I made you my world, have you heard?*"

SYNFORM *Following that, what is the focus of your current research activity?*

Dr. F. M. Fung It centers on discovering evidence-based strategies to learn chemistry, via several domains. First, the application of spatial reality technology in a virtual laboratory environment. Second, the construction of sustainable learning communities, and third, applied research in multimedia educational technologies (Figure 1).[1–6] These domains of research can be applied to multiple disciplines, from chemical security, to sustainable chemistry, and flow synthesis.

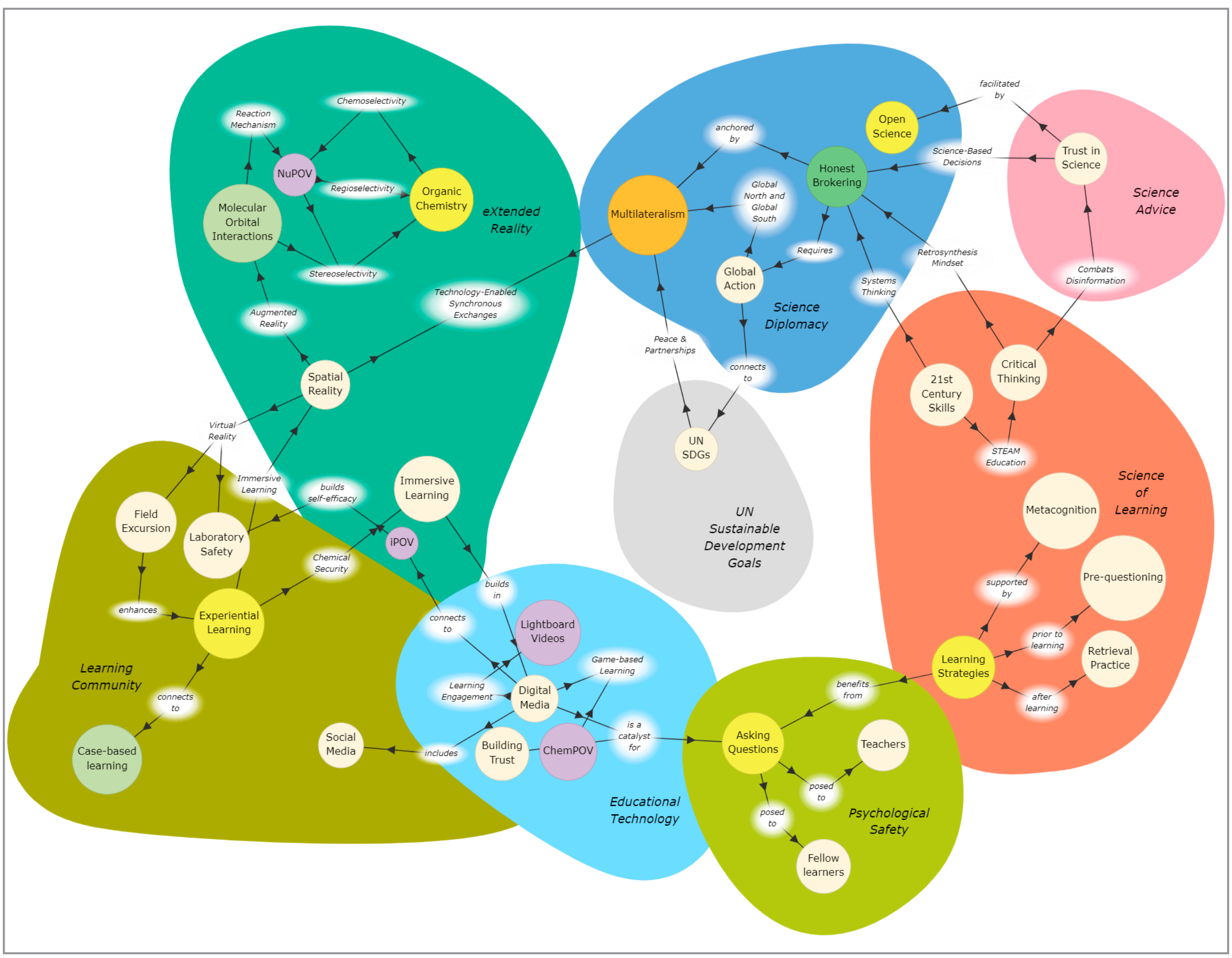


Figure 1 A Systems Thinking-inspired overview of the main research interests of F. M. Fung's research group using "SOCKit". SOCKit was developed as part of IUPAC Project 2020-014-3-050.

SYNFORM *What do you think about the modern role and prospects of organic chemistry?*

Dr. F. M. Fung First, organic chemistry is LIFE and it is a salient topic to teach enthusiastic learners! For instance, the relationships in organic chemistry are a close resemblance to life: such as nucleophile–electrophile, reducing agent–oxidising agent, suprafacial–antarafacial attacks, and many more. Some people call it the Yin–Yang or “Molecular Courtship”. Second, the philosophy in *Retrosynthetic Thinking*, strategizing about the possible synthons from the target molecule, could be taught to anyone who wishes to learn about the “Learning how to think like a human”. Third, collaboration in organic chemistry research can be a channel for science diplomacy between countries, and the importance of international scientific collaborations cannot be emphasized enough – it was evident during the pandemic.

SYNFORM *What difficulties are there for young upcoming chemists in your field? Do you have any tips?*

Dr. F. M. Fung Managing mental health is ostensibly a challenge for a number of people, and that is an important issue to address for chemists, both young and established. It might probably affect young upcoming chemists more as they are at the beginning of their research journey.

Pro tip: Learn to get things done, and sustain the love for learning, for learning endures all times.

SYNFORM *Could you tell us something about yourself outside the lab, such as your hobbies or extra-work interests?*

Dr. F. M. Fung I enjoy volunteering for causes I believe in, such as serving on the IUPAC Global Women’s Breakfast project and IUPAC Committee on Chemistry Education. I am a supporter of *Science Diplomacy* and *Youth Empowerment*, and therefore I founded the ACS Chapter in Singapore with several like-minded leaders. As an alumnus of the YSEALI program, I serve as a mentor for students from the Institute of Technical Education (ITE), Singapore. As a proud TUM alumnus, I act as a mentor for the TUM mentoring program for a researcher based in Stuttgart, Germany.

SYNFORM *What is your most important scientific achievement to date and why?*

Dr. F. M. Fung I believe that scientific achievement is only possible with a team of good people through concerted efforts in mentorship and youth empowerment in science. I vividly remember when I led the Singapore Delegation as Head Mentor at the 46th International Chemistry Olympiad 2014 held in Hanoi, Vietnam. Our representative attained the top position (1st Gold), a first-ever for Singapore, and still the best achievement to date since 1965. The mentors from the various countries kept in touch, and 10 years after, we still meet up and discuss about science, collaborations, and mentorship!

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