

Chuan Ching (CC) Foo

☎: +447754126529

✉: ccfoo88@gmail.com



ACADEMIC QUALIFICATIONS

- 2015 – 2020 **PhD in Crop Science** University of Nottingham.
Supervisor: Professor Erik Murchie
Thesis: Improvement of photosynthesis through photoprotection in wheat and rice.
Sponsor: Vice-Chancellor's Scholarship for Research Excellence, University of Nottingham, UK
- 2013 – 2014 **MSc in Crop Improvement**, University of Nottingham. Pass with Distinction.
Supervisors: Professor Erik Murchie and Dr Ranjan Swarup
Thesis: Characterization of spring wheat (*Triticum aestivum*) transformed with rice *PsbS* gene
Sponsor: Human capacity building in the private sector (PSTS) Scholarship, Brunei Government
- 2011 – 2012 **MPhil in Chemistry** (Part-time, Discontinued), University of Brunei Darussalam.
Supervisor: Professor David Young
Research: Synthesis of crystals for dye-sensitized solar cells (DSSC)
- 2008 – 2010 **BSc in Biotechnology**, Monash University.
Supervisor: Dr Joon Ching Juan
Thesis: Novozym 435-mediated conversion of Jatropha oil into biodiesel using methyl acetate under solvent free systems

MAIN INTEREST

Crop/plant physiology, food production, vertical farming, indoor farming, urban farming, CEA, artificial lighting

RELEVANT WORK EXPERIENCE

- Dec 2021 – Now **Senior Scientist** at Light Science Technologies Holdings PLC (UK). I manage and coordinate the laboratory and grow facility. I run lab tours, carry out site visits for experimental trials and advise clients on lab experiments. Currently working on leafy green and strawberry trials. I represent the company in conferences, events and outreach programs.
- Oct – Nov 2021 **Plant Scientist** at Light Science Technologies Holdings PLC (UK). I was in-charge of organising the lab (asset management, documentation filing etc) and worked to a good health and safety standard (setting up risk assessments and working instructions for the lab).
- 2019 **Research Technician** at the University of Nottingham with Professor Erik Murchie and Dr Lorna Mcausland, working on a BBSRC-funded International Wheat Yield Partnership research. I was responsible for the basic running of the experiment and training of students/postdocs in collection of chlorophyll fluorescence and gas exchange data.
- 2016 – 2020 **Laboratory Demonstrator** at the University of Nottingham for three modules. I prepared and assisted the running of practical sessions for undergraduates and master students. I was also involved in post-practical session data collection for students to complete their write-up.
- 2016 – 2017 **Research Technician** at the University of Nottingham with Professor Erik Murchie and Verdesian Life Sciences (Hampshire, UK). I was in-charge of a project looking at the effects of a biostimulant on crop photosynthesis.
- 2015 – 2019 **Research Technician** at the University of Nottingham with Professor Erik Murchie and Azotic Technologies (Nottingham, UK) studying the effects of nitrogen-fixing bacteria on photosynthesis in rice plants. I was in-charge of the annual project design to collection of data and statistical analysis of results. I provided evidence-based results and suggestions to the company. I have also supervised a master student on part of the project.

KEY SKILLS

Plant Physiology

- ✓ Gas exchange (LiCOR 6400XT, 6800; Walz GFS-3000; Delta-T AP4 Porometer)
- ✓ Chlorophyll fluorescence (LiCOR 6400XT, 6800; Walz GFS-3000, mini PAM, junior PAM, monitoring PAM; PSI Fluorcam FC800, fluorpen FP-100; Hansatech FMS 2+; PhotoSynQ MultiSpeQ v1.0, v2.0)
- ✓ Light interception within canopies (Meter ceptometer Accupar LP-90; PhotoSynQ MultiSpeQ)
- ✓ Soil moisture content (Delta-T soil moisture sensor ThetaProbe ML3x)
- ✓ Chlorophyll extractions, chlorophyll meter (Spectrum Technologies Inc. SPAD 502 plus)

Whole Plant Morphology and Plant Anatomy

- ✓ Stomatal impressions, stomata count
- ✓ Leaf area index (LiCOR leaf area meter LI-3100C; Trimble® Greenseeker®), biomass, height, tiller, leaf counts
- ✓ Threshing, seed counts, vernalization practices
- ✓ Crop architecture scoring (leaf rolling, erectness)
- ✓ Canopy temperature (FLIR thermal camera; Etekcity infrared thermometer)

Plant Growth

- ✓ Hydroponic, hydroleca clay, pot, tub and growth tank experiments
- ✓ Drought/water restriction experiment, nitrogen treatment experiment
- ✓ Crop canopies under controlled conditions (tropical glasshouse with built-in tanks)

Field Work Experience

- ✓ Study of photosynthesis (carbon assimilation) and photoprotection in a subset of PSTail wheat canopies under the supervision of Dr Matthew Reynolds and Dr Gemma Molero (CIMMYT, Mexico)
- ✓ Collections of leaf samples for Rubisco assay – collaboration with Dr Ivan Jauregui and Dr Sandrute Sakalauskiene from Elizabete Carmo Silva Lab (Lancaster University, United Kingdom)
- ✓ NPQ_(T) in a collection of wheat population with diverse leaf and canopy architecture – collaboration with Dr Richard Richards (CSIRO, Australia)

Teaching Experience

- ✓ Conducted introductory sessions on chlorophyll fluorescence and gas exchange with masters and PhDs during PEPG workshop (Lisbon, Portugal) in 2016 and 2018
- ✓ Laboratory demonstrator for practical classes; Advanced Molecular Techniques in Biotechnology, Applied Plant Physiology (Resource Capture by Crops) and Field Crops Cereals from 2016 – 2020.
- ✓ Supervised final year undergraduate, master and new PhD students for Professor Erik Murchie.
- ✓ Demonstrated kits (LiCOR, Walz, MultiSpeQ) and discussed experimental set-up and data collections with other scientists (PhD, postdocs, Azotic Technologies, etc) working with different plants including reed, rice etc.

Molecular Biology

- ✓ gDNA extraction, RNA extraction, PCR, semi-quantitative RT-PCR, gel electrophoresis

Managerial and Other Experiences

- ✓ Managed the equipment booking calendar, training and maintenance (including consumables), organised lab meetings, maintaining and updating SOPs and risks (health and safety) assessments for techniques used in the lab
- ✓ Experience on running and programming new growth room facilities (Conviron, Argus system) – particularly confirming light output settings
- ✓ Successful scholarships (MSc – Brunei government and PhD – University of Nottingham) and travel grant applications (Sam Burton Memorial Award, 2017, 2018; Kesteven WVS Traveling Scholarship Award 2018)
- ✓ Software: Microsoft Office, Genstat statistical analysis, basic R, ImageJ

COURSES

- ✓ St John Ambulance First Aid at Work. 6th – 8th June 2022
- ✓ Microsoft Word: Working Smarter. 16th April 2018
- ✓ Planning your research workshop. 8th February 2017
- ✓ Impact workshop for first year doctoral students. 30th March 2017
- ✓ Post-genomics and bioinformatics workshop. 10th – 12th July 2017
- ✓ Demonstrating in Laboratory Practical Course. 4th May 2016

VOLUNTEER AND COMMUNICATIONS

- ✓ Fascination of Plants Day, University of Nottingham. Creating awareness through simple activities with school kids. 18th May 2022
- ✓ Student Futures Day, University of Nottingham. Networking with university students. 18th February 2022
- ✓ Plant environmental Physiology Group (PEPG) Techniques Workshop (Lisbon, Portugal). Welcoming participants and assisting in chlorophyll fluorescence sessions. 2018
- ✓ Plant environmental Physiology Group (PEPG) Techniques Workshop (Lisbon, Portugal). Assisted in chlorophyll fluorescence session. 2016
- ✓ Science outreach and communication, SB Fest. Activities to educate kids on the importance of pollinators. 5th May 2018
- ✓ Student Conference Day, Biosciences Professional Skills for Bioscientists Event. Networking with undergraduate students, sharing and inspiring them with PhD experiences. 27th April 2018
- ✓ Hall resident tutor. Bonington Hall, University of Nottingham. Providing pastoral care to hall residents. 2016 – 2018

AWARDS AND ACTIVITIES

- ✓ Plant Breeding Fit for the Future. 12th October 2022
- ✓ Fruit Focus 2022. 13th July 2022
- ✓ Ted Cocking Prize for Best Thesis 2020
- ✓ Kesteven WVS Traveling Scholarship Award 2018
- ✓ Plant Environmental Physiology Group (PEPG) Techniques Workshop (Lisbon, Portugal): 9th – 15th Sept 2018.
- ✓ Plastid Preview Meeting (Lancaster, UK): 3rd – 4th Sept 2018. Poster presentation
- ✓ Plant Biology Europe 2018 Conference (Copenhagen, Denmark): 18th – 21st June 2018. Poster presentation.
- ✓ University of Nottingham Plant Sciences Division Postgraduate Symposium 2017/18 (Sutton Bonington, United Kingdom): 19th – 20th Apr 2018. Oral presentation. Plant and crop science division oral presentation prize, 3rd prize
- ✓ Sam Burton Memorial Award 2017 & 2018
- ✓ New Phytologist Next Generation Scientists Symposium (Norwich, United Kingdom): 24th – 26th July 2017. Poster presentation
- ✓ National Institute of Agricultural Botany (NIAB) Community Resource for Wheat Transformation (CRWT) Workshop (Cambridge, United Kingdom): 18th May 2017. Oral presentation
- ✓ University of Nottingham Plant Sciences Division Postgraduate Symposium 2016/17 (Sutton Bonington, United Kingdom): 16th – 17th May 2017. Poster presentation. Plant and crop science division poster prize, 2nd prize
- ✓ University of Nottingham Plant Sciences Division Postgraduate Symposium 2015/16 (Sutton Bonington, United Kingdom): 12th – 13th May 2017. Oral presentation
- ✓ Brunei Students' Research Symposium 2017. The path of sustainable development (London, United Kingdom): 29th Apr 2017. Poster presentation
- ✓ Sheffield Plant Physiologist Group (SPPG) Early Career Researcher Workshop (Sheffield, United Kingdom): 22nd Feb 2017. Poster presentation
- ✓ Plant environmental Physiology Group (PEPG) Techniques Workshop (Lisbon, Portugal): 12th–16th Sept 2016. Poster presentation
- ✓ The Association of Applied Biologists Conference. Exploiting novel sensors for detecting abiotic and biotic stress in crops (Sutton Bonington, United Kingdom): 27th – 28th June 2016. Poster presentation
- ✓ Shell LiveWIRE Programme Bright Ideas: 2011
- ✓ Shell LiveWIRE Leadership Camp Programme: 2011

PUBLICATIONS

C.C., Foo, A.J., Burgess, R., Retkute, P., Tree-Intong, A., Ruban and E.H., Murchie (2020). Photoprotective energy dissipation is greater in the lower, not the upper regions of a rice canopy: a 3D analysis. *Journal of Experimental Botany*, eraa411.

S., Hubbart. I.R.A., Smillie, M., Heatley, R., Swarup, C.C., Foo, L., Zhao and E.H., Murchie (2018). Enhanced thylakoid photoprotection can increase yield and canopy radiation use efficiency in rice. *Communications Biology*, 1(1), pp. 22.

C.C., Foo, A.L., Tan, F.L., Wimmer, A.H., Mirza, D.J., Young, S.W., Ng and E.R.T., Tiekink (2012). 4,5-diphenoxybenzene-1,2-dicarbonitrile. *Acta Crystallographica Section E* E68, o601.