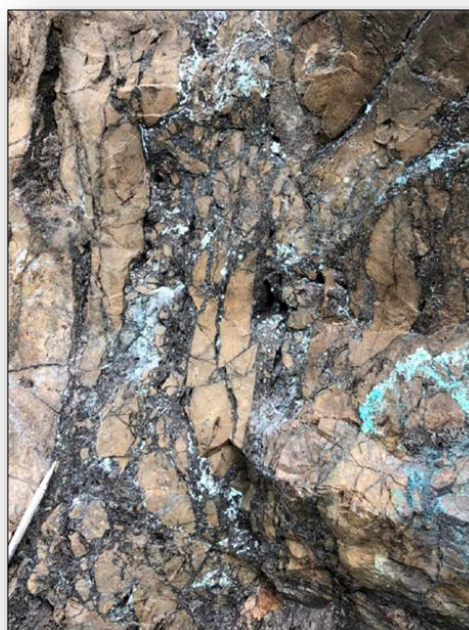


Porphyry and high sulfidation epithermal deposits – origins, settings, characteristics, and exploration

2-day Short Course, 1 - 2 April 2022



SHORT COURSE DESCRIPTION

Porphyry and related epithermal systems are the products of hydrous magmatism at convergent plate boundaries and in collisional and post-collisional settings. Ore formation in porphyry and epithermal systems involves the favourable conjunction of geodynamic, magmatic and hydrothermal processes. Fertile porphyry magmas can have distinctive magma and mineral chemistry that reflect formation processes and provide guides for exploration. Porphyry mineralization is typically focused within and around the apices of shallow crustal intrusive complexes. High sulfidation state mineralization can occur in breccias, veins and disseminated orebodies above the porphyry mineralized centre, but may be superimposed onto early porphyry mineralization in areas of rapid uplift and exhumation. The alteration footprint around porphyry and high sulfidation epithermal deposits can be extensive, including near surface lithocaps (advanced argillic and silicic alteration) and deeper level green rocks (propylitic alteration), which explorers must navigate to discover centres of mineralization.

This shortcourse will review the major characteristics of porphyry and high-sulfidation epithermal deposits through a series of live and recorded lectures, together with two interactive on-line practical sessions.



16th SGA BIENNIAL MEETING SHORT COURSE

SHORT COURSE SCHEDULE

Pre-recorded Lectures

Lecture One: Overview and introduction to the short course

Lecture Two: Introduction to porphyry deposits

Lecture Three: Introduction to high sulfidation epithermal deposits and lithocaps

Live Sessions

Day one – 1 April			
Content	Time (NZDT)	Topic	Session leader
Live lectures	09:00 am– 11:00 am	Porphyry deposits – alteration, mineralization and breccias	David Cooke
<i>Coffee Break: 11:00-11:30</i>			
Live practical exercise one (first slot – Americas, Oceania)*	11:30 am – 13:00 pm	Practical exercise one – describe porphyry rock samples, with discussion and questions	David Cooke and Lejun Zhang
	13:00 pm– 13:30 pm	Discussion and wrap up for day one	David Cooke and Lejun Zhang
Live practical exercise one (Europe, Africa, Asia)*	21:00 pm – 22:30 pm	Practical exercise one – describe porphyry rock samples, with discussion and questions	David Cooke and Lejun Zhang
	22:30 pm– 23:00 pm	Discussion and wrap up for day one	David Cooke and Lejun Zhang
Day two - 2 April			
Content	Time (NZDT)	Topic	Session leader
Live lecture	09:00 am – 10:00 am	High sulfidation epithermal deposits in unconventional environments	David Cooke
	10:00 am– 11:00 am	Hybrid porphyry – high sulfidation epithermal deposits	Lejun Zhang and David Cooke
<i>Coffee Break: 11:00-11:30</i>			
Live lecture	11:30 am– 12:30 pm	Exploring lithocaps	Lejun Zhang
Live practical exercise two (Americas, Oceania)*	12:30 pm– 13:30 pm	Practical exercise two – exploring lithocaps (in group)	Lejun Zhang and David Cooke
	13:30 pm– 14:00 pm	Group report back and wrap up for the short course	David Cooke and Lejun Zhang
Live practical exercise two (Europe, Africa, Asia)*	21:00 pm– 22:00 pm	Practical exercise two – exploring lithocaps (in group)	Lejun Zhang and David Cooke
	22:00 pm– 22:30 pm	Group report back and wrap up for the short course	David Cooke and Lejun Zhang

* - Repeats of live practicals will only be offered if sufficient registrations are received for the designated geographic regions.



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PRESENTERS



David Cooke



Lejun Zhang



David Cooke

David is the Director of CODES, the Centre for Ore Deposit and Earth Sciences at the University of Tasmania. He has also been an Associate Editor of Economic Geology since 2001. In collaboration with his students, postdoctoral research fellows and research colleagues, David has been researching hydrothermal and magmatic processes that lead to porphyry copper and epithermal gold ore formation since the mid-1980s. David's team have also been studying geochemical halos to porphyry and epithermal deposits for almost two decades, developing new geochemical exploration tools for the minerals industry, which was recognized with the inaugural AMIRA International Award for Geoscience Research Excellence in 2012. David received the Society of Economic Geologists' Thayer Lindsley lecturer award in 2005, the SEG Silver Medal in 2013, the Australian Academy of Science's Haddon Forrester King Medal in 2018, and was the SEG Distinguished Lecturer in 2021.

Lejun Zhang

Lejun is a Senior research fellow at CODES, the Centre of Ore Deposit and Earth Sciences at the University of Tasmania. His research is focused on characterising the geochemical footprints of large porphyry and epithermal systems and the processes that control element dispersion. He specializes in applying SWIR, whole-rock and alteration mineral chemistry for enhancing exploration in lithocap environments.

FEES

\$200 for members, \$250 for non-members, \$100 for student or retired members and \$120 for student or retired non-members. Register at <https://confer.eventsair.com/sga2022/registration>

FURTHER INFORMATION

Email David Cooke at d.cooke@utas.edu.au
