



## Magmatic indicator minerals—exploration and research applications for magmatic and hydrothermal ore deposits

June 1, 2021—Online 9 AM (UTC+10)

In the past decade, significant research efforts have been devoted to mineral chemistry studies to assist exploration for porphyry and other varieties of magmatic and hydrothermal ore deposits. A range of magmatic indicator minerals have been identified that can be used to identify the presence of, or potential for, magmatic and hydrothermal mineralization (e.g., zircon, apatite, magnetite, titanite, monazite). These accessory phases can also be used for geochronology and isotopic tracing, and some occur both as magmatic and hydrothermal phases, making them potentially powerful tools to add to the explorer's toolbox. Ideally, these indicator minerals should help explorers to identify the geochemical fingerprint of a mineral deposit and discriminate it from other deposit styles and background rocks.

As part of CODES' biannual Ore Deposit Geochemistry, Hydrology and Geochronology short course, we are presenting a one-day symposium on exploration and research applications of magmatic indicator minerals for magmatic and hydrothermal ore deposits. A series of presenters from world-leading researchers in mineral exploration research groups, government and industry will give presentations and participate in panel discussions that provide symposium participants with a state-of-the-art appraisal of this important and developing new field of geochemical exploration.

### SCHEDULE

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Accessory minerals in magmatic rocks (zircon, apatite, monazite, titanite, magnetite): mineralogy, trace element geochemistry and applications to research and exploration—*Michael Baker*

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U-Pb dating methods for magmatic minerals—*Sebastien Meffre*

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Zircon composition applied to porphyry copper exploration—*Robert Lee*

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Developing magnetite chemistry in mineral exploration for Ni-Cu-PGE deposits—*Sarah Dare*

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Porphyry indicator minerals (PIMS): apatite case study—*Farhad Bouzari*

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Zircon fertility assessments: case study of the Cowal district, NSW—*Christopher Leslie*

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**PANEL DISCUSSION**—Application of zircon, magnetite and apatite geochemistry to mineral exploration (**PANEL:** *Farhad Bouzari, Sarah Dare, Robert Lee, Christopher Leslie*)

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Zircon as a pathfinder for porphyry Cu-Mo-Au deposits—*Yongjun Lu*

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From arc magmas to porphyry deposits – Applications of litho-geochemistry and mineral chemistry to exploration —*Christian Ihlenfeld*

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Using zircon, titanite and apatite in porphyry exploration—*Matthew Loader*

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**PANEL DISCUSSION**—Porphyry indicator minerals: zircon, titanite and apatite (**PANEL:** *Christian Ihlenfeld, Yongjun Lu, Matthew Loader*)

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### REGISTRATION INFORMATION \*

Name: .....

Email: .....

#### Fee type. Please indicate

Industry/Government etc. (\$550 AUD)

Full-time student (\$90 AUD)

#### Preferred payment method. Please indicate

Credit Card (online payment link will be provided by email)

Invoice (Name, address and email address for person responsible for payment of invoice: .....

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Please return to [CODES.Info@utas.edu.au](mailto:CODES.Info@utas.edu.au)