2018 TIGeR CONFERENCE
Coupling between Metamorphism and Deformation
12–14 September, 2018
Curtin University, Perth
PROGRAM
The aim of this 3-day conference is to promote progress at the leading edge of this topic through presentations and open-forum discussion. We will focus on key aspects of the time-scales of:

- terrestrial planet formation
- orogenesis and metamorphism
- metasomatism and fluid flow
- crystal growth in nature
- element transport on short and long spatial scales
- weathering and related topics.

The total number of participants will be limited to about 80-100, to facilitate active participation and open discussion. So register early to avoid disappointment.

SPEAKERS INCLUDE:
Victor Calo (Curtin, Australia)
Katya Evans (Curtin, Australia)
Richard Henley (ANU, Australia)
Bruce Hobbs (CSIRO, Australia)
Bjarn Jarmveit (Oslo, Norway)
Mark Jessell (UWA & CET, Australia)
Luca Menegon (Plymouth, UK)
José Alberto Padrón-Navarta (Montpellier, France)
Mark Pearce (CSIRO, Australia)
Yury Pidluchikou (Lausanne, Switzerland)
David Prior (Otago, New Zealand)
Klaus Regenauer-Lieb (UNSW, Australia)
François Renard (Oslo, Norway & Grenoble, France)
Steven Smith (Otago, New Zealand)
Holger Stüritz (Tromsø, Norway & Orleans, France)
Lucie Tajcmanova (Zurich, Switzerland)
Nick Timms (Curtin, Australia)
Andrée Tammasi (Montpellier, France)
Claudia Trepmann (Munich, Germany)
John Wheeler (Liverpool, UK)
Robert Wintsch (Indiana, USA)
Jian-Jun Yang (Beijing, China)
Wen-ju Zhu (Maryland, USA)

THE AGENDA
The aim is to have short presentations (20 minutes for keynote speakers, 10 minutes for other talks) focusing on specific issues for later discussion. Afternoon poster sessions will provide further discussion time. The detailed schedule will be sent out after the registration period.

9.00 – 9.30am
REGISTRATION and TEA/COFFEE ICEBREAKER

WELCOME
Chris Moran
Deputy Vice-Chancellor (Research)

9.30 – 9.45
Andrew Putnis
Introduction to the 2018 TIGeR Conference

9.45 – 10.15
Mark Jessell
The challenge of simulating coupled deformation and metamorphism at the grain scale

10.15 – 10.45
José Alberto Padrón-Navarta
Coupling metamorphic reaction rates, fluid flow and microstructures

10.45 – 11.15
Richard Henley
High temperature, chemisorption-induced, crystal lattice transformations in mineralised skarns

11.15 – 11.45
Katya Evans
Equilibrium thermodynamics for non-hydrostatically-stressed Systems

11.45 – 12.00
Ivan Zibra
The backbone of the transpressional Yilgarn Orogen

12.00 – 12.15
Matthew De Paoli
Microstructural and microchemical study of low to medium-grade metamorphic rocks along the Ballard Shear Zone

12.15 – 13.30 LUNCH

13.30 – 14.30 DISCUSSION/POSTER SESSION

14.30 – 15.00
Klaus Regenauer-Lieb
Thermodynamics for metamorphism and deformation

15.00 – 15.30
Bruce Hobbs
Metamorphic reactions and the mechanics of compositional layering and lineation formation

15.30 – 16.00 COFFEE/TEA BREAK

16.00 – 16.15
Alison Ord
The influence of metamorphic reactions on localisation in deforming rocks

16.15 – 16.45
Nick Timms
Influences of the elastic anisotropy of minerals on deformation and metamorphism

16.45 – 17.15
Victor Calo
Modelling the Evolution of Metamorphic Rocks: Effects of Inhomogeneous Pressures

18.00 BARBECUE OUTSIDE BUILDING 312
THURSDAY 13 SEPTEMBER

9.00 - 9.30
Yury Podladchikou
Fluid escape structures from reacting and deforming rocks

9.30 - 10.00
John Wheeler
Why an understanding of diffusion creep is key to the debate about the effects of stress on chemical change in rocks

10.00 - 10.30
Lucie Tajcmanova
Interplay between deformation and chemical diffusion: An example from mechanically-controlled microstructures

10.30 - 11.15 COFFEE/TEA BREAK

11.15 - 11.45
Andréa Tommasi
Feedbacks between fluids and deformation in the upper mantle

11.45 - 12.00
Nishka Piechocka
Neoproterozoic 40Ar/39Ar mica ages mark the termination of a billion years of intraplate reworking in the Capricorn Orogen, Western Australia

12.00 - 12.15
Silvia Volante
Unravelling the structural and metamorphic evolution from M7-MP to LP-HF: a journey through the crust in the Georgetown Inlier (NE Australia)

12.15 - 13.15 LUNCH

13.15 - 14.15 DISCUSSION/POSTERS/VISIT TO JdL CENTRE

14.15 - 14.45
Holger Stunitz
Diffusion Creep in Eclogites: Relationships between Mineral Reactions and Deformation

14.45 - 15.15
Claudia Trepmann
Episodic deformation and mineral growth – the record of mylonites from the DAV, Eastern Alps

15.15 - 16.30 COFFEE/TEA BREAK

16.30 - 17.00
Mark Pearce
Localised deformation and carbonate alteration during gold mineralisation

17.00 - 17.15
Thomas Poulet
Modelling the formation of Bonanza-grade ore deposits

18.00 BUS TO THE BOATSHED RESTAURANT FOR THOSE SIGNED UP FOR THE DINNER

FRIDAY 14 SEPTEMBER

9.30 - 10.00
Francois Renard
Hydration of pericline breaks peridotite under serpentinization conditions

10.00 - 10.30
Wenlu Zhu
Experimental Evidence for Porosity Generation and Maintenance During Olivine Carbonation

10.30 - 11.00 COFFEE/TEA BREAK

11.00 - 11.30
Bjørn Jomtveit
Earthquake induced metamorphism

11.30 – 12.00
Jian-Jun Yang
Coronitic eclogites formed by seismic shock: An example from Yangkou in the Chinese Su-Lu high-pressure metamorphic belt

12.00 – 12.15
Arianne Petley-Ragan
Asymmetric damage and metamorphism across a lower crustal fault from the Bergen Arcs, western Norway

12.15 – 12.30
Aaron Cavosie
Evidence of high pressure shock deformation in granular zircon

12.30 - 13.30 LUNCH

13.30 - 14.30 DISCUSSION/POSTERS/VISIT TO JdL CENTRE

14.30 - 15.00
Luca Menegon
Earthquakes, metamorphism and rheological weakening in dry and strong granulites

15.00 - 15.30
Steven Smith
Dynamic earthquake rupture preserved in a creeping serpentinite shear zone

15.30 - 16.00 COFFEE/TEA BREAK

16.00 - 16.15
Denis Fougerouse
Deformation twins yield tectonic ages in monazite

16.15 - 16.45
David Prior
Dynamic recrystallisation and its effect on ice deformation: the future depends on understanding this!

CLOSE
METASOMATIC REACTIONS IN BORNITE: INSIGHTS FROM HYDROTHERMAL EXPERIMENTS AND MICROSCOPIC AND MINERALOGICAL CHARACTERIZATION
Idowu A. Adegoke, Fang Xia, Artur P. Deditius

MICROSEISMICITY ON AN ULTRASLOW RIDGE SEGMENT: IMPLICATIONS FOR SERPENTINIZATION
Claire Aupart, Schlindwein V., Ben-Zion Y., Renard F., Jamtveit B

LOCALIZED FOLDING AND COUPLED MINERAL REACTIONS
Pouria Behnoudfar, Victor Calo, Andrew Putnis, Bruce E. Hobbs, and Alison Ord

REACTION PATHWAYS AND TIMESCALES OF FLUID-ROCK INTERACTION
Andreas Beinlich, Esmée Boter, Oliver Plümper, Hans Vrijmoed, Timm John, Yuri Podladchikov, and the Oman Drilling Project Phase 1 Scientific Party

PHASE TRANSITIONS UNDER DIFFERENTIAL STRESS: DEVIATORIC STRESSES OF PRESSURE?
Sebastian Cionoiu, Lucie Tajcmanova, Evangelos Moulas, Holger Stünitz

MODELING THE EFFECTS OF INHOMOGENEOUS PRESSURE DISTRIBUTION IN THE EVOLUTION OF METAMORPHIC ROCKS
Santiago P Clavijo, Andrew Putnis, Victor M Calo, Luis FR Espath

A LOCALLY CONSERVATIVE STABILIZED CONTINUOUS GALERKIN FINITE ELEMENT METHOD FOR TWO-PHASE FLOW IN POROELASTIC SUBSURFACES
Quanling Deng, Victor Ginting, Bradley McCaskill, Prosper Torsu

FORMATION AND EFFECTS OF SILICA-RICH VEINS IN THE LINDÅS NAPPE, BERGEN ARCS, NORWAY
Kristina G. Dunkel, Håkon Austrheim, Arianne Petley-Ragan, Bjørn Jamtveit

GRAIN-VERSUS GRAIN BOUNDARY-BASED QUANTIFICATION OF SHAPE PREFERRED ORIENTATIONS IN NATURAL ROCK SALT BEFORE AND AFTER EXPERIMENTAL DEFORMATION
Johanna Heeb, Nicholas E. Timms, David Healy, Chris Elders, and Enrique Gomes-Rivas

THE THERMODYNAMICS OF DEFORMING METAMORPHIC ROCKS.
Bruce E Hobbs and Alison Ord

CARBONATE-SULFIDE DISSOLUTION AND PRECIPITATION - ARTEMIS CU-AU PROSPECT, QUEENSLAND
Manuel Knorsch, Fang Xia, Artur P. Deditius, Mark A. Pearce, Yulia Uvarova

STRESS ORIENTATION DEPENDENT REACTIONS DURING METAMORPHISM
Jo Moore, Andreas Beinlich, Håkon Austrheim, and Andrew Putnis

PHASE HERITAGE IN TI-BEARING MINERALS
Mark Pearce

DEFORMATION AND RETROGRESSION INITIATED BY HYDRATION ALONG PRE-EXISTING FABRICS, USING MONAZITE AND APATITE TO TRACK AND TIME GEOLOGICAL EVENTS
Alexander M. Prent, Andreas Beinlich, Tom Raimondo, Chris Kirkland, Noreen Evans, Andrew Putnis

INITIAL SR ISOTOPE RATIOS AS A TRACER OF EARLY CRUST-MANTLE EVOLUTION
Arathy Ravindran, Klaus Mezger, S. Balakrishnan, Ellen Koijman, Melanie Schmitt, Michael M. Raith

PRESERVATION OF OSCILLATORY ZONING IN PLAGIOCLASE INCLUSIONS FROM THE WESTERN GNEISS REGION, NORWAY
Katharina Schmidt, Xin Zhang, Johannes Vrijmoed, Lucie Tajcmanova, and Oliver Plümper

PHASE HERITAGE: DECIPHERING EVIDENCE OF PRE-EXISTING PHASES VIA INHERITED CRYSTALLOGRAPHIC ORIENTATIONS
Nicholas E. Timms, Timmons M. Erickson, Mark A. Pearce, Aaron J. Covasie, Cyril Cayron, Steven M. Reddy, Michael R. Zanetti

TRACE ELEMENT MOBILITY ALONG DEFORMATION TWINS DURING ULTRA-HIGH TEMPERATURE CRUSTAL METAMORPHISM
Rick Verberne, Steven M. Reddy, David W. Saxey, Denis Fougerouse, William D.A. Rickard, Chris Clark

EXPERIMENTAL STUDY ON THE EFFECT OF FLUID COMPOSITION ON SERPENTINISATION OF PERIDOTITE AT 240°C AND FLUID SATURATED CONDITIONS: KINETICS AND TEXTURAL EVOLUTION
Tobias Wengorsch, Andreas Beinlich, Andrew Putnis, Ben Grguric

A LOCALLY CONSERVATIVE STABILIZED CONTINUOUS GALERKIN FINITE ELEMENT METHOD FOR TWO-PHASE FLOW IN POROELASTIC SUBSURFACES
Quanling Deng, Victor Ginting, Bradley McCaskill, Prosper Torsu