



Sultan Qaboos University, Muscat, Sultanate of Oman
<http://www.geoman2012.com>

Conference Objectives

- 1) To provide a forum for presenting recent research on the geologic framework of the Arabian Plate.
- 2) To encourage the exchange of knowledge, ideas and experiences between scientists regarding the geological evolution of the region.
- 3) To promote the sustainable geological and environmental conservation and development of Arabia.

Venue

The Conference will be held at the Sultan Qaboos University for 3 days.

Conference Activities

Scientific Program

The contributing participants will present their research in a diverse range of thematic sessions. The Program will include oral and poster presentations and excursions. Oral Presentations will include invited papers and papers selected from the submitted abstracts.

All accepted abstracts will be published in GeoArabia Journal.

Social Program

A series of events and activities for participants and accompanying persons will be associated with the conference.

Language

The official language of the Conference is English. There will be no simultaneous translation.

Weather

January is a wonderful time to visit Oman because the weather at this time is generally excellent. Field trips into the mountains during January can expect temperatures of 20-25°C.

Keynote addresses

International experts will summarize recent developments in the geological understanding of the Arabian Peninsula and the Oman Mountains. We are pleased to announce the following keynote speakers:

- 1 - **Mike Searle**: Oxford University
"Obduction of the Oman Ophiolite – evidence from the High-Temperature metamorphic sole and the High-Pressure carpholite-blueschist-eclogite rocks".
- 2 - **Leroy Sylvie**: Paris University
"Structure and Evolution of the Southern Boundary of the Arabian plate: from Rifting to Spreading of the Gulf of Aden"
- 3 – **Alan Heward**: Petrogas Rima
"Oil in Oman- the Main Plays So Far"
- 4 - **Adolphe Nicolas**: Montpellier University, France
"High resolution mapping in the oman ophiolite - crustal accretion of a fast spreading ridge segment, role of a melt lens and hydrothermalism"
- 5 – **Peter Kelemen**: Columbia University
"In situ mineral carbonation in peridotite for CO2 capture & storage"
- 6- **Abdulrahman Alsharhan**: Middle East Geological Establishment, UAE,
"Petroleum System of the Middle East"



7-Henk Droste, Shell, Netherland
"The Mesozoic Carbonate Platforms of Oman"

Technical Sessions Themes

1 - The Arabian Plate Lithosphere and Boundaries

- i- Arabian lithosphere: seismicity, geophysics, tectonics, and petrology
- ii- Arabian Shield: evolution, mineralization, tectonism
- iii- Arabia-Eurasia convergence
- iv- Red Sea and related rifts

2 - The Sedimentary Cover of the Arabian Plate

- i- The sedimentary succession of Arabia
- ii- Origin and significance of major unconformities
- iii – Structural features within the sedimentary cover of Arabia

3 - Hydrocarbon Systems of Arabia

- i- Current status and future trends of the petroleum industry in Arabian states
- ii- Petroleum systems and plays
- iii- Challenges for optimizing recovery
- iv- Gas resources of Arabia
- v- Outcrop analogs for petroleum reservoirs and source rocks

4- Ophiolite Genesis and the Oman Mountains

- i- Geodynamics of the Oman ophiolite and other late Cretaceous ophiolites of SW Eurasia: Mid-ocean ridge or subduction initiation?
- ii-Hydrothermal Processes at Mid-Ocean Ridges
- iii- Chemical and Physical Processes within oceanic magma chambers
- iv Formation of ore deposits related to the Oman ophiolite
- v- Carbonate alteration: Implications for CO₂-sequestration
- vi- Geobiology of oceanic crust formation

5- Environment and Water Resources

- i- Climate Change from a Geological Perspective
- ii- Water resources in Arabia
- iii- Geohazards

- iv- Geoecology
- v- Eolian processes
- vi- Coral reefs
- vii- Meteorites and impact structures

After adjustments in accordance with the submitted abstracts, the full technical schedule will be made available on the conference website.

Field Trips

Please indicate the priority of the field trip(s) you may attend: 1st 2nd 3rd

**All meals will be provided on site by a catering company or local restaurants.*

****Minimum: 6 persons**

(1) Ophiolite section: ridge segment and propagating tip in sumail and haylayn massifs

Excursion Guides: Adolphe NICOLAS and FranÁoise BOUDIER

3 days, Costs: 100 OR+ accommodations, 10-12 January 2012

The excursion includes two nights on campsites. Participants need their personal equipment: light tent and sleeping bag.

Overview: This 3 days excursion aims at visiting in the Oman ophiolite a complete section in the central area of a chosen ridge segment and showing how such segments evolve at their propagating tip. The first leg in the Sumail massif, we will visit a complete section into the feeding zone of a segment and in the second leg, the limit of a segment in the Huwayl propagator, after a transfer to Haylayn massif

(2) Geological carbon capture & storage in mafic and ultramafic rocks

Excursion Guide: Peter Kelemen, Columbia University

2 days, Costs: 50 OR+ accommodations, 5-6 January 2012

Overview: On Day 1 we will visit two large travertine deposits with active alkaline springs emerging from peridotite, and then a large



escarpment exposing late Cretaceous listwanite (fully carbonated peridotite, magnesite + quartz + relict chromian spinel). On Day 2, we will visit three carbonate vein localities, as well as seeing a general overview of lithologies in the Oman ophiolite.

(3) The Northern Oman ophiolite :Oceanic crustal succession, ocean ridge segmentation, hydrothermal system and igneous history of the Oman ophiolite

Excursion Guides: Miyashita, S., Adachi, Y., Umino, S., Kusano, Y., Kurihara, Takazawa, E

3 days, Costs: 110 OR + accommodations, 10-12 January 2012

Overview: The field trip will cover the following: Oceanic mantle to crustal succession, volcanic stratigraphy, sheeted dike complex, layered gabbro, segmentation and propagation ridge, off-axis magmatism (wehrlite intrusions), peculiar hydrothermal system (chloritite), igneous history, (igneous mélange zones as a small scale discontinuity of ridge segment

(4) The Oman ophiolite: The Wadi Hamaliya section

Excursion Guides: Hugh Rollinson (Derby University, UK)

One day: Cost: 25 OR, 10th January 2012

Overview: This fieldtrip is based upon a road section through Wadi Hamaliya and covers the entire ophiolite section in a single day. It will cover the following: The Volcanic Sequence, a section through the sheeted Dykes, a variety of Gabbro types - Layered and Massive Gabbros, Mantle harzburgites and dunites, the Moho, Trondhjemitic Magmatic Breccia

(5) The High-Pressure carpholite-blueschist-eclogite rocks of Eastern Oman Mountains (Ruwi, Wadi Mayh, As Sifah area).

Excursion Guides: Mike Searle (Oxford University, UK)

One day, Cost: 25 OR, 10th January 2012

Overview: This field excursion will examine the High-Pressure metamorphic terrane to the east of Muscat. The excursion will examine the base of the Semail ophiolite around Muttrah where banded peridotites (dunites, harzburgites, lherzolites) are well exposed and follow this contact around the Ruwi valley where lawsonite-bearing meta-basalts and carpholite-bearing meta-sediments are exposed around Al Hamriyah and Wadi Qanu. We will examine one of the World's largest sheath folds the Wadi Mayh mega-sheath fold. The trip will continue structurally down-section to the intermediate HP garnet blueschists of the Hulw unit and end at the eclogite facies exposures along the coast. We will walk around the headland to the north of As Sifah village to examine the best outcrops of garnet + clinopyroxene + glaucophane + phengite eclogite. Spectacular exposures of high-strain ductile shear fabrics occur everywhere.

(6) Barr Al Hikman Modern Carbonates & Sabkhas

Excursion Guides: Michaela Bernecker (GUTech), Stephen Ehrenberg, Iftikhar Ahmed, and Abdul Rahman Al-Harthy (SQU).

**3 days, Cost: (90 OR+ accomodation)
Date: 10-12th January 2012**

Overview: The Bar Al Hikman peninsula contains both a range of modern carbonate depositional environments (coral reef, carbonate sand bodies, lagoons, aeolian dunes) and bodies of lithified carbonate strata formed in similar settings. Most of the surface of this very low-relief landscape is covered by sabkhas that formed by deposition of tidal-flat, beach, and lagoon facies modified by aeolian and evaporative processes. Barr Al Hikman is thus analogous to classic modern carbonates localities in the Bahamas, Belize, and Abu Dhabi, where commercial training enterprises have been conducted for many decades for petroleum industry staff.

(7): Jabal Jalan-Batain Melange:

Excursion Guides Salah Al-Khirbash & Martin Whitehouse, Sobhi Nasir



2 days: costs 50 OR + accomodation, 10-11 Janaury 2012

Overview: The Arabian Nubian Shield (ANS) superbly exposes a tectonic collage of oceanic arcs and micro-continental fragments that were juxtaposed by the late-Neoproterozoic collision of East and West Gondwana in the northward extension of the East African Orogen. To the east of the exposed shield of Saudi Arabia and Yemen, important clues to the evolution of the orogen are provided by widely separated basement inliers in NE Oman (Jebel Ja'laan, Jabal Qahwan & Qalhat), SE Oman (near Mirbat) and offshore on the Halanyat Islands and Socotra (Yemen).

This excursion will visit the Jabal Ja'laan basement, about 200 km SE of Muscat. This inlier comprises banded biotite-garnet-quartz-feldspar gneiss, migmatites, banded amphibolites (Ja'laan Gneiss) & banded biotite-sillimanite mica schist & gneiss (Al Wafi Mica Schist) intruded by ca. 830-840 Ma granitoids and younger dolerite & microgranite dikes.

The Batian Melange is found in the eastern part of Oman and includes parts of the Masirah ophiolite. We will visit several exotic rocks which are common in this area and includes; kimberlite, ultramafic lamprophyres, carbonatites, different varieties of ultramafic rocks, gabbros, alkaline seamount volcanics, deep sea radiolarites, Mn-ores as well as Tertiary alkaline volcanics.

8) Jabal Akhdar: M. Al Wardi

Excursion Guides: M. Al Wardi (SQU); M. Al-Kindi, GSO

One day, Cost: 25 OR 10th January 2012

Overview: This field trip will explore structural evolution of Jabal Akhdar and Oman Mountains in general from Precambrian to Late Tertiary deformation. Field trip will offer a complete transect across Jabal Akhdar culmination starting from Cretaceous carbonate at the northern flank through Precambrian rocks at the core until Late Cretaceous foreland deposits at the southern flank.

9- The Falaj System

Excursion Guides: Hamad al Hatmi; Talal Hosni

1 day: costs 25 OR, 10 January 2012

Overview: Falaj means a system for the distribution of water and is commonly used to describe the irrigation channel system downstream of the water's source. Some aflaj in Oman were built more than 1,500 years ago, whilst others were built at the beginning of the 20th century. There are now over 4,000 aflaj scattered throughout the Sultanate, with the highest concentration in Sohar and Nizwa

Organizing Committee

Prof. Sobhi Nasir (Chairman), Sultan Qaboos University
Dr. Iftikhar Ahmed (Secretary), Sultan Qaboos University
Dr. Salah Al-Khirbash (Technical Chair), Sultan Qaboos University
Dr. Mubarik Ali (Poster Session Chair), Sultan Qaboos University
Dr. Ali Lazki, Sultan Qaboos University
Dr. Abdulrazak Alsayigh, Sultan Qaboos University
Dr. Talal Al-Hosni, Sultan Qaboos University
Dr. Saleh Al-Anboory, Ministry of Oil & Gas
Dr. Ali Al-Rajhy, Ministry of Commerce & Industry
Dr. Juma Al-Belushi, Mubadala Oil & Gas
Dr. Mohamed Al-Kindi, Geological Society of Oman
Dr. Stephen N. Ehrenberg, Gas and Oil Center, Shell Chair, SQU
Zaher Al-Suleimani, Public Authority for Water & Electricity
Qusay Al Amri, Sultan Qaboos University
Mohamed Al Balushi, Sultan Qaboos University

Scientific Committee

Sebastian Tappe, University of Alberta, Canada
Adolphe Nicolas, Université Montpellier, France
Françoise Boudier, Université Montpellier, France
Sylvie Leroy, IStEP CNRS Univ. France
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Martin Okrusch, Uwerzburg University, Germany
Hans-Joachim Massonne, Stuttgart University,
J. Pfaender, TU Bergakademie Freiburg, Germany



Adrian Immenhauser, Ruhr-Universität Bochum,
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 Petroleum and Minerals, KSA
 Mustafa M. Hariri, King Fahd University of
 Petroleum & Minerals, KSA
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 Tsutomu Sato, Hokkaido University, Japan
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 Stephen Lokier, ADOC, UAE
 Hugh Rollinson, University of Derby, UK
 Alan Woolley, Natural History Museum, UK.
 Robert Stern, University of Texas at Dallas, USA
 Juerg Matter, Columbia University, USA
 Christopher Andronicos, Cornell University, USA

Correspondence and abstract submission

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Registration Fees

The registration fees are as follows:

Before 30/10/2011 US\$200

After 30/10/2011 US\$250

Students: 50\$

**Fees should be transferred to the following
 accounts in behalf of the College of Science
 Bank Muscat, Sultan Qaboos University
 branch Account #: 38-500320081017**

Lodging

Hotel accommodation will be arranged upon
 request. Hotel rates range from US\$70 to US\$300
 per day. More expensive luxury hotels are also
 available. Limited accommodation will be
 available on the campus. We recommend the
 following hotels which will give a special rate for
 the participants:

**Majan, Al-Safeer, Al-Bahja, Golden Tulip,
 Interncontinental, Coral, Ramada**

Transports will be provided from these hotels to
 the conference venue. For more information
 please visit the Conference website as well as
 following website:

<http://www.destinationoman.com/hotels.html>

***Because Oman is extremely busy in January,
 we kindly recommend you to book your hotel as
 soon as possible***

VISAS and Travel to Oman

Visa can be offered at the airport. For information
 please visit the following website:

http://www.rop.gov.om/english/dg_passport_visa_tourist.asp

**We can assist in issuing the visa which will cost
 20 OR. Contact us for help**

Important Dates

July 2010 : 1st circular and Announcement
Aug 1, 2011 : Deadline for abstract submission
 Sep 15, 2011 : Notification of abstract acceptance
 Oct 1, 2011 : 3rd circular and Scientific
 Program
 Oct 30, 2011 : Deadline for early registration
 Jan 7-9, 2012 : Conference

