

PROVISIONAL CONFERENCE PROGRAMME

SUNDAY 07 SEPTEMBER

14.00-16.00	Registration
16.00-16.30	Opening Ceremony
16.30-17.30	PLENARY 1
17.30-19.30	WELCOME BUFFET

MONDAY 08 SEPTEMBER

SESSION 2 KEYNOTE PRESENTATIONS CHAIR: Garo Antranikian

09.00-09.30	K1: Patrick Forterre , Universite Paris-Sud, France Mesophilic crenarchaeota are not Crenarchaea but Thaumarchaea: proposal for a third archaeal phylum.
09.30-10.00	K2: Yoshizumi Ishino , Kyushu University, Japan Mesophilic crenarchaeota are not Crenarchaea but Thaumarchaea: proposal for a third archaeal phylum.
10.00-10.30	K3: Li Huang , Chinese Academy of Sciences, Beijing, China The Sac10b protein family of Archaea.

1030-1100 MORNING TEA

SESSION 3A MICROBIOLOGY & MICROBIAL ECOLOGY. CHAIR: Aharon Oren (parallel with Session 3B)

11.00-11.20	O1: Stephen Pointing , The University of Hong Kong, China Microbial colonization of lithic niches in arid and hyper-arid deserts
11.20-11.40	O2: Odd G. Brakstad , SINTEF, Norway A 16S rDNA microarray for oil reservoirs – challenges and possibilities
11.40-12.00	O3: Ana Casanueva , University of the Western Cape, South Africa Nanoarchaeal 16S rRNA gene sequences are widely dispersed in hyperthermophilic and mesophilic halophilic environments.
12.00-12.20	O4: Lijin Jiang , Third Institute of Oceanography, Xiamen, China Stratified microbial communities involving in methane metabolism along the sediment core of Pearl River Estuarine, Southern China.
12.20-12.40	O5: Elena González-Toril , Centro de Astrobiología, Madrid, Spain Prokaryotic and eukaryotic microbial evolution in acid mine effluents, La Zarza-Perrunal case (Iberian Pyritic Belt, Spain).

SESSION 3B PROTEINS & ENZYMES. CHAIR: Michael Danson (parallel with Session 3A)

11.00-11.20	O6: Michael WAdams , University of Georgia, USA Defining the genome, proteome and metalloproteome of the hyperthermophilic archaeon, <i>Pyrococcus furiosus</i> .
11.20-11.40	O7: Nuno Borges , Universidade Nova de Lisboa, Portugal Kinetic and structural characterization of the enzymes involved in the synthesis of di-myo-inositol-phosphate in <i>Archaeoglobus fulgidus</i> .
11.40-12.00	O8: Elizabeth Dridge , University of Exeter, United Kingdom Molecular analysis of the type II molybdo-enzymes from <i>Archaeoglobus fulgidus</i> and <i>Thauera selenatis</i> .

- 12.00-12.20 **O9: B. Franzetti**, Institute of Structural Biology, France
Proteolysis in extremophiles: structures, enzymology and possible roles of the archaeal TET proteins.
- 12.20–12.40 **O10: Arnold Driessen**, University of Gronigen, The Netherlands
Analysis of secreted proteins and membrane vesicles reveals the presence of endosome sorting complex components in Crenarchaeota.

1240-1400 LUNCH

SESSION 4A MICROBIOLOGY & MICROBIAL ECOLOGY CHAIR: Steve Pointing (parallel with Session 4B)

- 14.00-14.20 **O11: Nils-Kåre Birkeland**, University of Bergen, Norway
Thermo-acidophilic methane oxidation by Verrucomicrobia extends our perception of biological methane oxidation.
- 14.20-14.40 **O12: Nuraan Khan**, University of Western Cape, South Africa
Diversity of hypolithic communities in the Dry Valley soils of Eastern Antarctica.
- 14.40-15.00 **O13: O Godfroy**, Centre de Brest, France
Presence and activity of anaerobic ammonium oxidizing bacteria at deep-sea hydrothermal vents.
- 15.00-15.20 **O14: Paul Norris**, University of Warwick, United Kingdom
Selection and diversity of *Thermoacidophilic archaea* in mineral sulfide oxidation.

SESSION 4B PROTEINS & ENZYMES CHAIR: Mike Adams (parallel with Session 4A)

- 14.00-14.20 **O15: Pongpan Laksanalamai**, University of Maryland, USA
A versatile small heat shock protein from a eurypsychrophilic archaeon, *Methanococcoides burtonii*
- 14.20-14.40 **O16: Richard D Morgan**, New England Biolabs, USA
Rational engineering of new DNA specificities in *MmeI*, a restriction endonuclease isolated from *Methylophilus methylotrophus*.
- 14.40-15.00 **O17: Carrie Rye**, University of Exeter, United Kingdom
Studies on thermophilic L-haloacid dehalogenases.
- 15.00-15.20 **O18: Winnie Wu**, University of Bath, United Kingdom
Functional characterisation of a putative photolyase from the extreme Haloarchaeon, *Haloferax volcanii*.

15.20-15.50 AFTERNOON TEA

SESSION 5A: ADAPTATIONS to EXTREMOPHILY CHAIR: Elizaveta Bonch-Osmolovskaya (parallel with Session 5B)

- 15.50-16.10 **O19: Yuejin Hua**, Institute of Nuclear-Agricultural Sciences, China
Evolution Adaptation to γ -irradiation in *Escherichia coli*
- 16.10-16.30 **O20: Nicolas Guilian**, University of Chile, Chile
Molecular mechanisms involved in biofilm formation in extremophile biomining bacteria
- 16.30-16.50 **O21: Henri Grosjean**, University of Paris-South, France
How hyper-thermophilic organisms stabilize their Nucleic Acids?
- 16.50-17.10 **O22: Tairo Oshima**, Institute of Environmental Microbiology, Japan
Unique polyamines produced by extreme thermophiles

SESSION 5B	GENES & NUCLEIC ACIDS (parallel with Session 5A)	CHAIR: Frank Robb
15.50-16.10	O23: David L Bernick , University of California, USA Small RNA in <i>Pyrobaculum</i>	
16.10-16.30	O24: John A Tainer , Berkeley National Laboratory, USA Master keys to DNA replication, repair, and recombination from the structural biology of macromolecular complexes from <i>Pyrococcus</i> and <i>Sulfolobus</i> .	
16.30-16.50	O25: Patricia Chan , University of California, USA Analysis of transfer RNA introns and 5' leading sequence in hyperthermophilic <i>Pyrobaculum</i> .	
16.50-17.10	O26: Hu Xiang , Chinese Academy of Sciences, China Genetic and biochemical characterization of the poly(3-hydroxybutyrate-co-3-hydroxyvalerate) synthase in <i>Haloferax mediterranei</i>	

17.10-18.15 POSTERS: 1- 80

TUESDAY 09 SEPTEMBER

SESSION 6	KEYNOTE PRESENTATIONS	CHAIR: Helena Santos
09.00-09.30	K4: Craig Cary , University of Waikato, New Zealand Examining microbial diversity of thermophilic communities in hot mineral soils of Tramway Ridge, Mt. Erebus, Antarctica	
09.30-10.00	K5: Nitin Baliga , Institute for Systems Biology, Seattle, USA Mining extreme potential through predictive modeling	
10.00-10.30	K6: Rudolf Ladenstein , Karolinska Institute, Sweden Heat capacity, configurational entropy and the role of ionic interactions in protein thermostability	

1030-1100 MORNING TEA

SESSION 7A	MICROBIOLOGY & MICROBIAL ECOLOGY (parallel with Session 7B)	CHAIR: Juergen Wiegel
11.00-11.20	O27: Alexander Slobodkin , Russian Academy of Sciences, Russia Thermophilic iron-reducing prokaryotes: recent developments in phylogeny and physiology	
11.20-11.40	O28: Aharon Oren , The Hebrew University of Jerusalem, Israel Environmental genomics studies in the Dead Sea: characterization of a microbial community surviving in an increasingly extreme environment	
11.40-12.00	O29: Zeng Xiang , IFREMER, Brest, France Isolation and characterization of the first obligate piezophilic hyperthermophilic Archaeon from a deep-sea hydrothermal vent	
12.00-12.20	O30: Elizaveta Bonch-Osmolovskaya , Academy of Sciences, Russia New thermophilic crenarchaeota in Uzon Caldera hot springs (Kamchatka)	
12.20-12.40	O31: Barry Johnson , Bangor University, United Kingdom Contrasting microbial communities and geochemical dynamics in subterranean and surface-terrestrial extremely acidic environments	

SESSION 7B	PROTEINS & ENZYMES. (parallel with Session 7A)	CHAIR: Roy Daniel
11.00-11.20	O32: Gyri Teien Haugland , University of Bergen, Norway Functional analysis of the MCM and Cdc6 proteins from the thermoacidophilic euryarchaeon <i>Thermoplasma acidophilum</i>	

- 11.20-11.40 **O33: Fran Perler**, New England Biolabs, USA
Transient-state kinetics of intein-mediated protein splicing in the *Methanococcus jannaschii* KlbA intein
- 11.40-12.00 **O34: Karl Payne**, University of Bath, United Kingdom
2-Oxoacid dehydrogenase multienzyme complexes in thermophilic Archaea
- 12.00-12.20 **O35: Marco Moracci**, Institute of Protein Biochemistry, Naples, Italy
Engineering glycosidases from extremophiles for the synthesis of oligosaccharides
- 12.20-12.40 **O36: Robert OJ Weinzierl**, Imperial College, United Kingdom
Functional dissection of archaeal RNA Polymerase using novel robotic approaches

12.40-14.00 LUNCH / HALF-DAY TOUR PROGRAM

WEDNESDAY 10 SEPTEMBER

- SESSION 8 KEYNOTE PRESENTATIONS CHAIR: Mosé Rossi**
- 09.00-09.30 **K7: James A Coker**, University of Maryland, USA
Genomic analysis of extremely halophilic archaea: Survival in multiple extremes
- 09.30-10.00 **K8: Sonja Albers**, University of Groningen, The Netherlands
Assembly and function of archaeal cell surface structures
- 10.00-10.30 **K9: Peter Rose**, Rhodes University, South Africa
Life at the Air/Water interface

1030-1100 MORNING TEA

- SESSION 9A ADAPTATIONS TO EXTREMOPHILY CHAIR: Derek Litthauer**
(parallel with Session 9B)
- 11.00-11.20 **O37: Fengping Wang**, State Oceanic Administration, China
Environmental adaptation: genomic analysis of the piezotolerant and psychrotolerant deep-sea iron reducing bacterium *Shewanella piezotolerans* WP3
- 11.20-11.40 **O38: Juergen Wiegel**, University of Georgia, USA
The novel anaerobic halo-alkalithermophile *Natranaerobius thermophilus*: Studies on the mechanisms for thriving under triple extreme growth conditions
- 11.40-12.00 **O39: Ksenia Medvedkova**, Russian Academy of Sciences, Russia
Temperature-induced adaptive responses of thermophilic and thermotolerant obligate methanotrophs
- 12.00-12.20 **O40: Carlos Jerez**, University of Chile, Chile
Copper resistance mechanisms of extremophilic bacteria and archaea living under exceptionally high concentrations of metals
- 12.20-12.40 **O41: Pablo Zamora**, University of Chile, Chile
Participation of the phenylpropanoid pathway in response to salt excess on extreme plant *Deschampsia antarctica*

- SESSION 9B APPLICATIONS CHAIR: Hans Kotlar**
(parallel with Session 9A)
- 11.00-11.20 **O42: Kirsten Eley**, TMO Renewables Ltd, United Kingdom
The development of a novel thermophilic *Bacillus* capable of high yield ethanol production
- 11.20-11.40 **O43: Jenny Littlechild**, University of Exeter, United Kingdom
Thermostable biocatalysts for industrial biotechnology

- 11.40-12.00 **O44: Sidsel Markussen**, SINTEF, Norway
Biocatalytical conversion of heavy oils-characterizing and screening of a microbial strain collection
- 12.00-12.20 **O45: Rohit Sharma**, Panjab University, India
Nitrile hydrolysing enzymes from extremophiles: their role in biocatalysis
- 12.20-12.40 **O46: Gavin Jones**, University of Cape Town, South Africa
The oxidative environment of bioleaching bioreactors and its effect on extremophile *Sulfolobus metallicus*

1240-1400 LUNCH

SESSION 10A PROTEINS & ENZYMES CHAIR: Jenny Blamey (parallel with Session 10B)

- 14.00-14.20 **O47: Mark Levisson**, Wageningen University, The Netherlands
Functional analysis of Thermostable Esterases: biochemical properties, crystal structures and applications
- 14.20-14.40 **O48: Michael Thomm**, University Regensburg, Germany
Structure function relationships in archaeal and eukaryotic RNA polymerases
- 14.40-15.00 **O49: Esta van Heerden**, University of the Free State, South Africa
Metabolic promiscuity from *Thermus scotoductus* SA-01: An extensive investigation of the proteins from this thermophile from the deep subsurface
- 15.00-15.20 **O50: Laurence Prunetti**, IBSM, France
Characterization of a new respiratory supercomplex from the hyperthermophilic bacterium *Aquifex aeolicus*

SESSION 10B APPLICATIONS CHAIR: Brian Jones (parallel with Session 10A)

- 14.00-14.20 **O51: Ian Brown**, University of Birmingham, United Kingdom
Pyrococcus furiosus α -amylase used within industrial food sterilisation processes
- 14.20-14.40 **O52: Silvia Berkner**, University of Bayreuth, Germany
Sulfolobus – *E. coli* shuttle vectors
- 14.40-15.00 **O53: Marilize Le Roes-Hill**, University of Cape Town, South Africa
Exploiting extreme environments in search for novel actinomycetes and their oxidative enzymes
- 15.00-15.20 **O54: Nataša Poklar Ulrich**, University of Ljubljana, Slovenia
Thermal-stability of Diether C25 liposomes derived from the hyperthermophilic archaeon *Aeropyrum pernix* K1

1520-1550 AFTERNOON TEA

SESSION 11A PROTEINS & ENZYMES CHAIR: Esta van Heerden (parallel with Session 11B)

- 15.50-16.10 **O55: J el Querellou**, IUEM, Plouzan , France
The heterodimeric primase from the Euryarchaeon *Pyrococcus abyssi*: A multifunctional enzyme for initiation and repair?
- 16.10-16.30 **O56: AS Reshetnikov**, RAS Pushchino State University, Russia
Ectoine biosynthesis genes and enzymes of halotolerant and halophilic methylotrophic bacteria
- 16.30-16.50 **O57: Petter Thureborn**, S dert rn University College, Sweden
Functional metagenomics- mining and mutagenesis of novel low-temperature-active lipolytic enzymes
- 16.50-17.10 **O58: Mos  Rossi**, Istituto de Biochimica delle Proteine CNR, Italy
Isolation and characterization of a *Sulfolobus solfataricus* protease inhibitor homologous with the eukaryotic PEBP members

- SESSION 11B METABOLIC PROCESSES** **CHAIR: Peter Schoenheit**
(parallel with Session 11A)
- 15.50-16.10 **O59: Karin Willquist**, Lund University, Sweden
Regulation of hydrogen production of *Caldicellulosiruptor saccharolyticus*
- 16.10-16.30 **O60: Rosa María Martínez-Espinosa**, Universidad de Alicante, Spain
Nitric and nitrous oxide production by the haloarchaeon *Haloferax mediterranei*
- 16.30-16.50 **O61: Sun Bok Lee**, Pohang University of Science & Technology, Korea
Non-phosphorylated L-rhamnose metabolic pathway in *Thermoplasma acidophilum*
- 16.50-17.10 **O62: Stephen Techtmann**, University of Maryland, USA
Distinct regulation of carbon monoxide oxidation pathways to carbon fixation and energy conservation in anaerobic bacteria from Kamchatkan Hot Springs

1710-1815 POSTERS: 81 – 160

THURSDAY 11 SEPTEMBER

- SESSION 12 KEYNOTE PRESENTATIONS** **CHAIR: Don Cowan**
- 09.00-09.30 **K10: Tullis C Onstott**, Princeton University, USA
Shedding light on the terrestrial subsurface biosphere in deepest, darkest Africa through metagenomic analyses
- 09.30-10.00 **K11: Amare Gessesse**, Addis Ababa University, Ethiopia
Novel biotechnological products and processes from alkaliphiles of East African soda lakes
- 10.00-10.30 **K12: Peter Bergquist**, Macquarie University, Australia
In vitro evolution of biocatalysts from extremophiles for biotechnological exploitation.

1030-1100 MORNING TEA

- SESSION 13A ADAPTATIONS TO EXTREMOPHILY** **CHAIR: Jenny Littlechild**
(parallel with Session 13B)
- 11.00-11.20 **O63: Simonetta Bartolucci**, Università degli Studi di Napoli, Italy
Insight into the antioxidant system of *Sulfolobus solfataricus*
- 11.20-11.40 **O64: Walter Holmes**, Virginia Commonwealth University, USA
Protein-RNA interactions explain how tRNA is stabilized in *Thermotoga maritima*
- 11.40-12.00 **O65: Anita-Elin Fedøy**, University of Bergen, Norway
A cold-active enzyme with an unusual high thermal stability: Isocitrate dehydrogenase from the psychrophilic bacterium *Desulfotalea psychrophila*
- 12.00-12.20 **O66: Eva Rosenbaum**, Institut de Biologie Structurale, Grenoble, France
TET3 protease from *P. horikoshii* reveals astonishing properties of high pressure and temperature resistance
- 12.20-12.40 **O67: Sabato D'Auria**, Institute of Protein Biochemistry, CNR, Italy
On the molecular strategies utilized from *Thermus thermophilus* for stabilizing the structure of a Trehalose/Maltose-Binding Protein

- SESSION 13B GENES & NUCLEIC ACIDS** **CHAIR: Michael Thomm**
(parallel with Session 13A)
- 11.00-11.20 **O68: Nikolai Ravin**, Centre Bioengineering, RAS, Russia
Complete genome sequence of hyperthermophilic proteolytic archaeon *Desulfurococcus kamchatkensis*
- 11.20-11.40 **O69: Subrata Pal**, Jadavpur University, India
Construction of environmental DNA libraries from hot spring sediments and enrichment cultures to access chromium reducing genes

- 11.40-12.00 **O70: Alexander Lebedinsky**, Russian Academy of Science, Russia
Clustering of CO dehydrogenase and energy-converting hydrogenase genes is a specific feature of diverse hydrogenogenic carboxydotrophs
- 12.00-12.20 **O71: Gabor Rakhely**, University of Szeged, Hungary
Biohydrogen via a new pathway? Formate hydrogen lyase in the hyperthermophilic archaeon, *Thermococcus litoralis*
- 12.20-12.40 **O72: José Berenguer**, Universidad Autónoma de Madrid, Spain
Denitrification in *Thermus thermophilus*: the dual role of the nitrate reductase

1240-1400 LUNCH

SESSION 14 METABOLIC PROCESSES CHAIR: Henri Grosjean (single session)

- 14.00-14.20 **O73: Corinne Appia-Ayme**, ICNRS, Marseille, France
New insights into the iron and the sulfur energetic metabolism of the strict acidophilic bacterium *Acidithiobacillus ferrooxidans*
- 14.20-14.40 **O74: Marie-Thérèse Giudici-Ortoni**, IBSM-CNRS, Marseille, France
Sulfur metabolism in the hyperthermophilic bacterium *Aquifex aeolicus*
- 14.40-15.00 **O75: Magnus Lundgren**, Wageningen University, The Netherlands
Cell cycle characteristics of Crenarchaeota: unity among diversity
- 15.00-15.20 **O76: Frank Robb**, University of Maryland Biotechnology Institute, Baltimore, USA
Regulation of protein folding activity during normal growth and heat shock in the hyperthermophile *Pyrococcus furiosus*

1520-1550 AFTERNOON TEA

SESSION 15 APPLICATIONS CHAIR: Simonetta Bartolucci (single session)

- 15.50-16.10 **O77: Hans Kristian Kotlar**, Statoil Hydro, Norway
Biocatalytic conversion of heavy oil by use of extremophiles-effects on reservoir recovery
- 16.10-16.30 **O78: Anne Marie Hickey**, University of Exeter, United Kingdom
Immobilisation and use of thermophilic biocatalysts in miniaturised flow reactors
- 16.30-16.50 **O79: Sadia Ilyas**, NIBGE, Pakistan
Changes in mineralogy of Galena ore after biohydrometallurgical treatment of various acidophiles
- 16.50-17.10 **O80: Amaraja Joshi**, Agharkar Research Institute, India
Production of exopolysaccharide (EPS) by an alkaliphilic bacterial strain of *Vagococcus carniphilus* MCM B-1018 isolated from alkaline Lonar Lake, India

PLENARY SESSION 2 CHAIR: Stephanie Burton

- 17.20-18.20 **PL2: Eric Mathur**, Synthetic Genomics, Inc., California, USA
Extremophiles and biotechnology

18.20 CLOSING CEREMONY

19.30 CONFERENCE BANQUET