

**12th HPBB
CONFERENCE**



**International Conference on
High Pressure Bioscience and Biotechnology
HPBB 2024**

Lyon, Oct. 1st - Oct. 3rd

Booklet

The International Association of High Pressure Bioscience and Biotechnology (HPBB)





12th HPBB Program



September, 30th

18h00 **Pre-meeting-welcome-get-together and lab visits**
(Bâtiment Pasteur, INSA de Lyon, 11 Avenue Jean Capelle)

October, 1st

8h30 **Registration and welcome**

9h15 **Conference opening**
Phil Oger, Local organization

Food Sciences session 1 (Chair Marie de Lamballerie)

Keynote 1 : High-pressure Processing (HPP) of Meat Systems: Molecular Changes, Quality Aspects and Industrial Applications

Tomas BOLUMAR (Max Rubner-Institut, Germany)

10h15-10h45 **Coffee and Posters**

10h45 **Food Sciences Session 2 (Chair Marie de Lamballerie)**

O1 : Impact of hyperbaric storage and moderate pressure pasteurization on the volatile compounds of watermelon juice

Vasco Lima (University of Aveiro, Portugal)

O2 : The effects of nonionic kosmotropes under high pressure: implications for protein-flavonoid non-covalent Interactions

Avi Shpigelman (Israel Institute of Technology, Israel)

Industrial sponsor

Irian Technologies (Moissac, France)

12h00-13h30 **Lunch and Posters**

13h30-15h00 **Food Sciences Session 3 (Chair Avi Shpigelman)**

O3 : Moderate-pressure-pasteurization of salmon in combination with oxygen scavenger: a new strategy for improving color

Alireza Mousakhani Ganjeh (University of Aveiro, Portugal)

O4 : Development of a Secondary Model for Full Geeraerd Under High Hydrostatic Pressure

Alpas Hami (METU-Food Engineering Department, Turkey)

O5 High pressure combined with biopreservation: effects on acceptability of cooked ham

Laurence Pottier (Ecole Nationale Vétérinaire, Agroalimentaire et de l'Alimentation Nantes-Atlantique, France)

Industrial sponsor

Hiperbaric (Burgos, Spain)

15h00-16h15 **Coffee and Posters**

16h15-17h00 **Microbiology session 1 (Chair Anaïs Cario)**

O6 : Hyperbaric inactivation - a novel tool for Alicyclobacillus acidoterrestris spores' destruction in commercial apple juice as affected by a previous HPP and PEF pre-treatment

Carlos Pinto (University of Aveiro, Portugal)

O7 : Size distribution of Escherichia coli cells after high hydrostatic pressure treatment

Kazutaka Yamamoto (National Agriculture and Food Research Organization, Japan)



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October, 2nd

8h30 **Welcome**

8h50 **Microbiology Session 2 (Chair Phil Oger)**

Keynote 2 : Homeocurvature and homeoviscosity: unifying principles of membrane adaptation
Jacob WINNIKOFF (Harvard University, USA)

O8 : Real-time imaging of bacterial motility with high-pressure microscopy
Nishiyama Masayoshi (Kindai University, Japan)

10h00-10h30 **Coffee and Posters**

10h30-12h00 **Microbiology Session 3 (Chair Phil Oger)**

O9 : Cellular Transfection using Rapid Decrease in Hydrostatic Pressure
Shudi Huang (University of Toronto, Canada)

O10 : Influence of high hydrostatic pressure with benzoic acid addition on the energy metabolism and inactivation of budding yeast *Saccharomyces cerevisiae*
Toru Shigematsu (Niigata University, Japan)

O11 : Mechanosensing in Yeast: The Role of the Cell Wall Integrity Pathway in *Saccharomyces cerevisiae* under High-Pressure Stress
Fumiyoshi Abe (Aoyama Gakuin University, Japan)

O12 : Combining extreme microfluidics and *in situ* analyses techniques to get close insights into deep-sea vents microbial ecosystems
Emma Bohuon (ICMCB, Bordeaux, France)

12h00-13h30 **Lunch and Posters**

13h30-15h00 **Physics/Chemistry Session 1 (Chair Judith Peters)**

Keynote 3 : The limits to life at high pressures and their astrobiological relevance
Stewart GAULT (Edinburgh University, UK)

O13 : Pressure effect on protein cluster formation induced by multivalent ions
Marcel Wolf (TU Munich, Germany)

O14 : Unravelling the mechanisms of adaptation to high pressure in proteins
Antonino Caliò (LIPhy, Grenoble, France)

15h00-16h15 **Coffee and Posters**

16h15-17h00 **Physics/Chemistry session 2 (Chair Roland Winter)**

O15 : Probing the pressure stability of R-Phycocyanin from red macroalgae *Porphyra haitanensis*
Simeon Minic (University of Belgrade, Serbia)

O16 : Probing biomolecular conformational landscapes by High-Pressure NMR spectroscopy (HP-NMR)
Ewen Lescop (ICSN, Gif-sur-Yvette, France)

19h30-23h00 **Gala dinner: Brasserie Georges** (30 Cour de Verdun Perrache, 69002 Lyon)



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October, 3rd

8h30 **Welcome**

8h50-10h00 **Physics/Chemistry session 3 (Chair Roland Winter)**

O17 : Effects of pressure, temperature, salts, and osmolytes on biomolecular liquid-liquid phase separation

Ryo Katahara (Ritsumeikan University, Japan)

O18 : High pressure effects of nanoplastics on structural integrity of lipid membranes

Judith Peters (LIPhy, Grenoble, France)

O19 : Inhibitor binding in rare excited states of the Ras oncogene protein revealed by high pressure macromolecular crystallography

Nathalie Colloc'h (Caen University, France)

10h00-10h30 **Coffee and Posters**

10h30-11h45 **Physics/Chemistry session 4 (Chair Ryo Kitahara)**

O20 : Next steps towards the understanding of the drivers of evolution to HHP adaptation in Archaea

Phil Oger (INSA Lyon, France)

Keynote 4 : Life in Multi-Extreme Environments - A Physicochemical View

Roland Winter (TU Dortmund, Germany)

11h45-12h00 **Presentation of next HPBB**

12h00 **Conference closing and farewell**