



2024 International Nonthermal Processing Workshop

*“NONTHERMAL PROCESSES TO FOSTER DIVERSITY,
SUSTAINABILITY AND RESILIENCE OF FUTURE FOOD SYSTEMS”*



npw2024@atb-potsdam.de

October, 07-09, 2024
Potsdam, Germany

2024 EFFoST / IFT-NPD Workshop on Nonthermal Processing of Foods

Program

organized by



ACKNOWLEDGEMENTS

We would like to thank the authors, members of the scientific committee, sponsors and supporters for contributing on creating 2024 EFFoST / IFT-NPD Workshop on Nonthermal Processing of Foods as a successful event.

ORGANIZING TEAM

Anke Kemnitz, Marios Psarianos, Luma Rossi Ribeiro, Josefine Karl, Giacomo Rossi, Denise Schadow, Justus Heinz Schneider, Jessica Lietze, Oliver Schlüter

INTERNATIONAL SCIENTIFIC COMMITTEE

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PROGRAM – October 7, 2024

08:00 a.m.	Bus shuttle from Potsdam Platz der Einheit to ATB	
08:30 a.m.	Registration	Foyer CIRCLE
09:00 a.m.	Opening remarks and informal greeting <i>Oliver Schlüter, Carmen I. Moraru</i>	Room Z003
09:30 a.m.	Initiation of the short course	Room Z003
09:30 a.m.	High pressure processing <i>Avi Shpigelman</i>	Room Z003
10:15 a.m.	Pulsed electric fields <i>Mariana Morales-de la Peña</i>	Room Z003

11:00 a.m. **Coffee break and poster session**

11:30 a.m.	Ultrasound processing <i>Robert Sevenich</i>	Room Z003
12:15 a.m.	Irradiation and light technologies <i>Carmen I. Moraru</i>	Room Z003

01:00 p.m. **Lunch break and poster session**

02:00 p.m.	Cold atmospheric plasma <i>Silvia Tappi</i>	Room Z003
02:45 p.m.	Combined applications <i>Brijesh Tiwari</i>	Room Z003

03:30 p.m. **Coffee break and poster session**

04:00 p.m.	Other innovations <i>Jens Hammerl</i>	Room Z003
04:45 p.m.	Success stories <i>Roman Buckow</i>	Room Z003
05:30 p.m.	Concluding remarks and discussion <i>Oliver Schlüter</i>	Room Z003

06:00 p.m. **Get together at the Foyer CIRCLE**

08:00 p.m. **Bus shuttle from workshop venue to Potsdam city centre**

PROGRAM – October 8, 2024

08:00 a.m.	Bus shuttle from Potsdam Platz der Einheit to ATB	
08:30 a.m.	Registration	Foyer CIRCLE
09:00 a.m.	Opening ceremony and welcome talks <i>Oliver Schlüter, Dietrich Knorr</i>	Room Z003
Session 1: Applications of high pressure processing Chair: Robert Sevenich		Room Z003
09:20 a.m.	The innovative application of ultra-high pressure in the processing of fermented chili peppers <i>Liang Zhao</i>	Room Z003
09:40 a.m.	Production of HPP natural hydrogels from conventional and non-conventional starch sources <i>Katerina Koshenaj & Giovanna Ferrari</i>	Room Z003
10:00 a.m.	The effects of nonionic kosmotropes under high pressure: implications for protein-flavonoid non-covalent Interactions <i>Shahar Plaut, Zoya Okun & Avi Shpigelman</i>	Room Z003
10:20 a.m.	Enhancing protein functionality in animal and plant-based foods by high pressure processing <i>Roman Buckow</i>	Room Z003
10:40 a.m.	High Pressure Processing (HPP): a technology for sustainable food preservation and waste reduction <i>Rui Queirós</i>	Room Z003

11:00 a.m. Coffee break and poster session (**Group photo in front of the CIRCLE at 11:00**)

Session 2: Applications of pulsed electric fields and ohmic heating technologies Chair: Carmen I. Moraru		Room Z003
11:40 a.m.	Company presentation by Elea Technology GmbH <i>Stefan Töpfel</i>	Room Z003
12:00 p.m.	Transformation of agro-food by-products into high value-added ingredients through pulsed electric fields <i>Mariana Morales et. al.</i>	Room Z003
12:20 p.m.	Decontamination of almond-based milk alternative by pulsed electric fields: Comparison of microbial resistance and chamber design <i>Arisa Thamsuaidee et. al.</i>	Room Z003
12:40 p.m.	Mechanisms of accelerated inactivation of bacterial spores by ohmic heating <i>Sudhir Sastry et. al.</i>	Room Z003
13:00 a.m.	Scaling of continuous PEF processes by means of dimensionless numbers and computational fluid dynamics (CFD) <i>Justus Knappert et. al.</i>	Room Z003

01:20 p.m. Lunch break and poster session

Session 3: Applications of ultrasound and sonication processes Chair: Brijesh Tiwari		Room Z003
02:00 p.m.	Ultrasonic Extraction of Nutrients from Plant - From Feasibility to Production <i>Thomas Hielscher</i>	Room Z003
02:20 p.m.	Optimisation of manothermosonication in the liquid whole egg pasteurisation: food safety and quality assessments <i>Edward Ebert et.al.</i>	Room Z003
02:40 p.m.	Application of non-thermal pretreatment methods (PEF, US) to produce apple snacks on a semi-industrial scale <i>Katarzyna Rybak et. al.</i>	Room Z003
03:00 p.m.	Designing and 3D printing of food snacks based on apple pomace and lemon albedo through the application of ultrasound technology <i>Serena Carpentieri, Joanna Harasym & Giovanna Ferrari</i>	Room Z003
03:20 p.m.	Unravelling the Molecular Response of Escherichia coli When Exposed to High Power Ultrasound Treatment <i>Esther Tobeckukwu Okafor et. al.</i>	Room Z003

03:40 p.m. Coffee break and poster session

Session 4: Success stories of innovations in food processing Chair: Stefan Toepfl		Room Z003
04:10 p.m.	Impact of electrolyte water treatment and storage conditions on polyphenol content and antioxidant capacity of whole apple fruit <i>Oluwafemi J. Caleb et. al.</i>	Room Z003
04:30 p.m.	Potential for mild microwave treatment on biochemical qualities, secondary metabolites, and microbial load of 'Sunectwentyone' nectarine fruit <i>Zinash A. Belay et. al.</i>	Room Z003
04:50 p.m.	Assessing electroporation of different plant tissue structures: Influence of method of analysis on quantification <i>Madita Kirchner et. al.</i>	Room Z003
05:10 p.m.	Nonthermal concentration of fluid foods using a hybrid membrane processing approach technology <i>Carmen I. Moraru</i>	Room Z003
05:30 p.m.	High pressure homogenization as a pre-processing technology to tackle techno-functional challenges of alternative protein sources in aqueous solutions <i>Rachel Levy et. al.</i>	Room Z003
05:50 p.m.	Cocktails for non-barkeepers: Use of phages for natural biocontrol of MDR S. aureus CC398 strains <i>Anna-Delia Knipper et. al.</i>	Room Z003

06:10 p.m. Bus shuttle from workshop venue to evening event (Biosphere Potsdam)

07:00 p.m. Evening event

PROGRAM – October 9, 2024

08:30 a.m.	Bus shuttle from Potsdam Platz der Einheit to ATB	
09:00 a.m.	Registration	Foyer CIRCLE
Session 5: Applications of high pressure processing Chair: Avi Shpigelman		Room Z003
09:30 a.m.	Diversity of high-pressure processing units and applications <i>Jasna Ivanovic</i>	Room Z003
09:50 a.m.	High pressure improves enzymatic proteolysis and the release of oligopeptides with α-amylase inhibitory from sea cucumber proteins <i>Aimi Zafirah et. al.</i>	Room Z003
10:10 a.m.	Impact of high-pressure processing on the textural and microbiological quality of food and feed based on alternative proteins <i>Merve Guzel et. al.</i>	Room Z003
10:30 a.m.	Improving the Properties and Functionalities of Biopolymer-Based Materials Using High-Pressure Processing for Food Packaging Applications <i>Xiaomeng Wu & Xiaojun Liao</i>	Room Z003
10:50 a.m.	In vitro starch digestibility and gastrointestinal release of bioactive compounds from tapioca starch-based HPP hydrogels <i>Katerina Koshenaj, Serena Carpentieri & Giovanna Ferrari</i>	Room Z003

11:10 a.m. **Coffee break and poster session**

Session 6: Applications of cold atmospheric plasma Chair: Silvia Tappi		Room Z003
11:40 a.m.	Cold Plasma Intervention technologies for microbiological safety in fresh poultry processing <i>Paula Bourke</i>	Room Z003
12:00 a.m.	Combining non-thermal plasma technology with hygienic design for food and water safety for fresh-cut lettuce <i>Uta Schnabel et. al.</i>	Room Z003
12:20 a.m.	Cold plasma for the inactivation of emerging bacterial pathogens on fresh cut fruit and vegetables <i>Junior Bernardo Molina Hernandez et. al.</i>	Room Z003

12:45 a.m. **Lunch break and poster session**

Session 7: Sustainability aspects Chair: Rick Falkenberg		Room Z003
02:00 p.m.	Sustainable valorization of cherry pomace: A novel cascade approach using pulse electric fields and ultrasound-assisted extraction <i>Ervehe Rrucaj, Gianpiero Pataro & Giovanna Ferrari</i>	Room Z003
02:20 p.m.	Process simulation and LCA to assess novel solutions based on nonthermal technologies to increase the sustainability of tomato processing industries <i>Emadaldin Abdurrahman et. al.</i>	Room Z003
02:45 p.m.	Closing remarks <i>Oliver Schlüter</i>	Room Z003

- 03:30 p.m.** **Coffee break and poster removal**
- 04:00 p.m.** **Guided tour ATB (optional)**
- 05:00 p.m.** **Bus shuttle from workshop venue to Potsdam city centre**

POSTER LIST

Poster no.	Title, Authors
1	Insight into the effect and mechanism of high pressure processing on pectin methyl esterase activity and persimmon juice yield and quality <i>Jiayue Xu et. al.</i>
2	Insight into the mechanism of high hydrostatic pressure effect on inhibitory efficiency of three natural inhibitors on polyphenol oxidase <i>Xuezhi Tian et. al.</i>
3	Quality and Safety evaluation of Tenebrio molitor paste submitted to high hydrostatic pressure processing <i>Giacomo Rossi et. al.</i>
4	Unveiling the influence of high hydrostatic pressure and protein interactions on the color and chemical stability of cyanidin-3-O-glucoside <i>Wenxin Wang, Liang Zhao & Xiaojun Liao</i>
5	Exploring high hydrostatic pressure effects on anthocyanin binding to serum albumin and food-derived transferrins <i>Peiqing Yang, Liang Zhao & Xiaojun Lia</i>
6	Effect of pulsed electric fields processing on the protein properties of house crickets <i>Marios Psarianos, Luma Rossi Ribeiro & Oliver Schlüter</i>
7	Influence of pulsed electric fields on the drying rate and cannabinoid content in hemp plants <i>Hanna Harmeling et. al.</i>
8	Ohmic heating assessment for the preservation of fresh-cut mango <i>Enrique Martinez-Martínez et. al.</i>
9	Novel Methods for the Preservation of Donor Human Milk <i>Ruth Conboy-Stephenson et. al.</i>
10	Optimising Non-Thermal Preservation of Macroalgae: A Preliminary Study on High-Pressure Processing for Enhanced Storage Stability and Quality <i>Denise Schadow & Oliver Schlüter</i>
11	Influencing Aroma and Texture: The Effect of Ultrasound on a Fiber-Enriched Plant-Based Yoghurt <i>Julia Matysek et. al.</i>
12	Environmentally Friendly and Sustainable Extraction of Bioactive Compounds Using Enzyme-Assisted Extraction (EAE) and High-Pressure Homogenization (HPH) as Nonthermal Techniques <i>Fatemeh Mojarri et al.</i>
13	Comparative study: Thermal and non-thermal treatment on enzyme deactivation and selected quality attributes of fresh carrot juice <i>Muhammad Umair et. al.</i>
14	Enhancing Shelf Life of pumpkin pulp with natural-based preservative and High-Pressure Processing <i>Luma Rossi Ribeiro, Eva Landgräber & Oliver Schlüter</i>

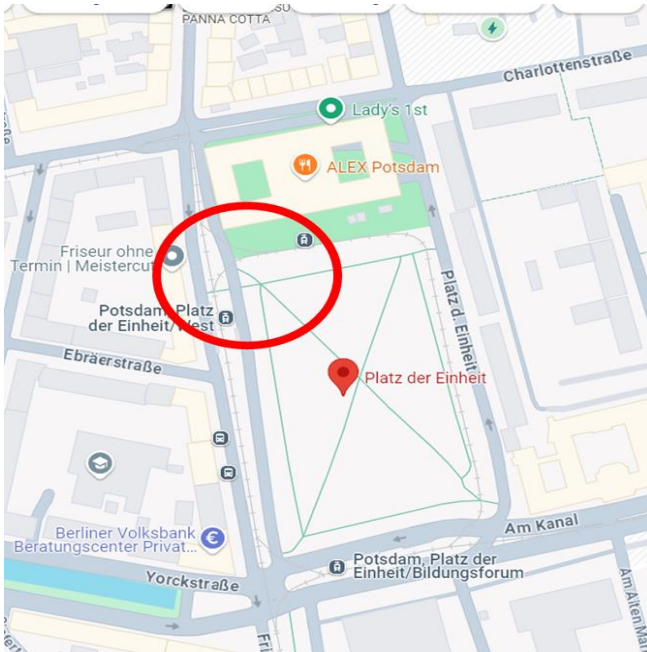
CONFERENCE VENUE – Leibniz Institute for Agriculture Engineering and Bioeconomy (ATB)



ATB – CIRCLE
Room Z003
Foyer
Poster exposition
Coffee and lunch breaks

BUS shuttle meeting point

Potsdam Platz der Einheit



INFORMATION

ADDRESSES

Workshop venue

October 7 – 9 **Leibniz Institute for Agriculture Engineering and Bioeconomy (ATB)**
Max-Eyth-Allee 100, 14469 Potsdam, Germany

Evening event

October 8 **Biosphere Potsdam**
Georg-Hermann-Allee 99, 14469 Potsdam

PROGRAM UPDATES

The organizers reserve the right for **program changes**.

ORGANIZATION

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PUBLIC TRANSPORT

Travel service of German Railways: <https://reiseauskunft.bahn.de/bin/query.exe/en>
Transport in Potsdam: <https://www.vbb.de/en/fahrinfo>

FURTHER INFORMATION

Please visit our conference website <https://effost-ift-npw2024.atb-potsdam.de/en/home>.