

## **Summer School: ERA-Chair in VALORTECH** **Organized by the ERA-Chair in VALORTECH,** **Estonian University of Life Sciences, Tartu, Estonia**

### **Theme: Agri-food wastes and by-products valorization: Functional product development**

**Duration:** 03 days, September 19 - 21, 2022

**Field of study:** Functional Food & Feeds

**Module:** Online/Hybrid mode

Open for Masters, Ph.D. students, and other professionals

**Organizer:** ERA-Chair in Food By-products Valorization Technologies (VALORTECH), Estonian University of Life Sciences, Tartu, Estonia

**Course schedule:** The course includes lecture sessions provided by subject experts, laboratory based course/hands-on training, and individual/group assignments and visit to local food industries.

#### **About the course:**

The summer school course will give an overview of functional foods and livestock feeds development through the valorization of agri-food waste and by-products. Participants will be introduced to development of functional products such as meat, dairy, and livestock feeds. Eminent researchers will deliver lectures on the focused theme, followed by hands-on training for the participants on functional product development, including processing methods and sensory quality evaluation. The participants will learn the concepts of designing functional food/feed product development. Besides, participants will get an opportunity to visit some of the local food industries in and around Tartu and learn about on-site food production. Innovative discussions, interactions and group activities will also be a part of this summer school.

#### **PROGRAM**

<b>DAY 1</b>	<b>19.09.2022</b>
<b>9:00 - 9:30</b>	<b>Registration of participants and refreshments</b>
<b>9:30 - 9:45</b>	<b>Welcome and introduction:</b> Rajeev Bhat, Professor, ERA-Chair in Valortech, Estonian University of Life Sciences
<b>10:00 - 11:10</b>	<b>Lecture 1</b>
	<b>Agri-food wastes and by-products: applications in alternative protein products</b> Speaker: Sirli Rosenthal, Head of Product Development & Sensorics, Center of Food and Fermentation Technologies TFTA, Estonia. + Q&A
<b>11:10 - 11:30</b>	<i>Tea &amp; Coffee break</i>
<b>11:30 - 12:40</b>	<b>Lecture 2</b>

	<b>Preservation of meat products using plant-based ingredients/plant extracts</b> Speaker: Tõnu Püssa, Professor, Estonian University of Life Sciences, Estonia. + Q&A
12:40 - 13:30	<i>Lunch break &amp; free interactions</i>
13:40 - 15:40	<b>Workshop 1</b> ( <i>Supervised &amp; conducted VALORTECH PhD students</i> ) <i>Preparation of meatballs with chokeberry extracts and assessment of the physicochemical and sensory quality</i>
15:40 - 16:00	<i>Tea &amp; Coffee break</i>
16:00 - 18:00	<b>Workshop 1 continues</b> <i>Preparation of meatballs with chokeberry extracts and assessment of the physicochemical and sensory quality</i>
19:00	<i>Dinner</i>
<b>DAY 2</b>	<b>20.09.2022</b>
9:00 - 10:10	<b>Lecture 3</b> <b>The Challenges of Fiber-Enrichment of Dairy Products</b> Speaker: Ene Viiard, Head of Innovation, Center of Food and Fermentation Technologies TFTA, Estonia. + Q&A
10:10 - 10:20	<i>Tea &amp; Coffee break</i>
10:20 - 11:30	<b>Lecture 4</b> <b>Plant extrants for livestock, new or well-forgotten old?</b> Speaker: Marko Kass, Associate Professor, Estonian University of Life Sciences, Estonia. + Q&A
11:30 - 12:30	<b>Group activities for on-site participants</b> ( <i>Supervised &amp; conducted by VALORTECH researchers and PhD students</i> ) <i>Effective modes to valorize a certain waste</i>
12:30- 13:30	<i>Lunch break</i>
13:30 - 15:30	<b>Workshop 2:</b> ( <i>Supervised &amp; conducted VALORTECH PhD students</i> ) <i>Preparation of reduced fat ice cream enriched with dietary fibers.</i>
15:30 - 15:50	<i>Tea &amp; Coffee break</i>
15:50 - 17:50	<b>Workshop 2 continues</b> <i>Preparation of reduced fat ice-cream enriched with dietary fibers.</i>
19:00	<i>Dinner</i>
<b>DAY 3</b>	<b>21.09.2022</b>
9:00 - 11:00	<b>Workshop 3</b> ( <i>Supervised &amp; conducted VALORTECH PhD students</i> ) <i>From Waste to Pellets</i>
11:00 - 12:00	<i>Lunch break</i>
12:00 - 12:10	Vote of thanks: Oliivika Zeiger, Project Manager, ERA-Chair in VALORTECH, EMU
12:10 - 17:00	Industry visits: TBC

**Learning outcome:**

At the end of the course, participants will be able:

- to have a good understanding on the development of functional products from agri-food wastes and by-products;
- to propose novel ideas for sustainable and cost-effective development of functional products;
- to understand the importance of managing agri-food wastes, maximal utilization of by-products, and circular economy concepts;
- to familiarize with product development technologies and processes involved thereof.

### **WORKLOAD AND GRADING:**

**The total course workload is divided as follows (1 ECTS):**

- Self-centred learning – 4 h
- Lectures – 5 h
- Laboratory work/hands-on training – 10 h
- Excursion/industry visits – 6 h
- Assignments & other activities – 1 h

**Grading** (applies for on-site participants only):

The course is graded either as pass/fail. The minimal criteria for passing the course require all participants to be active individually and in teamwork. A final report or presentation needs to be submitted. A certificate will be awarded to each of the participants who complete all of the sessions.

### **Application to the course:**

We accept the applications from local and exchange students, professionals, and other learning community members. The minimum requirement to be a participant is to hold a Bachelor's degree. On-site participation is limited to 10 participants and other interested participants (no limit) are welcome to attend online lectures.

**Please attach the following while submitting your application (for on-site participants ONLY):**

- Please provide one of the following: A short CV/ ResearchGate ID / ORCID/Google Scholar link/ or please fill in the details in the registration sheet
- Motivation letter (up to 300 words).

### **Course/Tuition fees:**

This course is organized free of cost. However, external participants need to apply for their own funding (for travel costs, visa processing, accommodation etc). Food and refreshments are served free of cost.

### **Registration:**

<https://forms.gle/AmnRjFGmn3PDvatY8>

**The application period is open until 01.08.2022 23:59 (UTC+3).** Once registration is completed, an email confirmation and information to join the event will be sent to the participants.

### **Cancellation terms:**

***In the case of cancellation:** The participants are requested to inform the organizers at least 2 weeks before the course begins. This will give opportunity for other interested participants to attend.*

### **Contact persons:**

Oliivika Zeiger (Project manager, ERA-Chair in VALORTECH, Estonian University of Life Sciences, email: [Oliivika.Zeiger@emu.ee](mailto:Oliivika.Zeiger@emu.ee) Tel: +372 5345 6349)

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