



# Digital Agro-Food & Forestry (r)evolution

University of Trás-os-Montes  
and Alto Douro (UTAD),  
Vila Real, Portugal

Auditorium B0.02  
Laboratorial Building

12<sup>th</sup> - 13<sup>th</sup> December 2019

## Programme

12<sup>th</sup> December – Morning

09:00 **Registration of participants**

09:30 **Opening Session**

Ana Barros (Director of CITAB)  
José Caldeira (INESC TEC Administration Board)  
Artur Cristóvão (Vice-Rector of UTAD)  
Isabel Ferreira (Secretary of State for Interior Valorisation)

### **SESSION 1**

09:45 **Needs of contribution of digital modelling to functional foods design**

Cristina Garcia Viguera, Spanish Research Council Institute CEBAS-CSIC (Keynote speaker)  
& Raúl Dominguez-Perles (CEBAS-CSIC)

10:15 **Spectroscopic method for the traceability and authentication of food matrices**

Irene Gouvinhas, Ana Barros, UTAD

10:30 **Digital platform for obesity control: A case study**

José Maria Tallon, Medical Clinic Dr. Tallon

10:45 **Discussion**

11:00 **Coffee-break**

### **SESSION 2**

11:15 **New and emerging technologies for the Digital  
Agriculture of the future**

Sigfredo Fuentes, University of Melbourne (Keynote speaker)

12:00 **LoRaWAN Wireless Sensor node system for multi functional heat pulse probe**

António Valente, UTAD

12:15 **Development of an intelligent control system for water and nutrient  
management for fertigation systems**

Samir Mehmeti, INESC TEC

12:30 **Leaf water status assessment of olive by vegetation indices**

Pedro Marques, UTAD

12:45 **Discussion**

13:00 **Lunch Break**



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12<sup>th</sup> December – Afternoon

### **SESSION 3**

- 14:30 **Leveraging in the digital technologies for more resilient and sustainable forest value chains**  
Alexandra Marques, INESC TEC (Keynote speaker)
- 15:15 **Extracting physical information from wood NIR spectra**  
José Carlos Rodrigues, ISA-University of Lisbon
- 15:30 **Heavy-Duty robots for Agro-food & Forestry: converting field machines into ROS**  
André Araújo, Ingeniarius Lda.
- 15:45 **Monitoring of the invasion of Portugal by *Vespa velutina nigrithorax* through an Integrated Geographic Information System**  
José Aranha, UTAD
- 16:00 **Coffee-break**
- 16:15 **Forest monitoring system**  
Thadeu Brito, IPBragança
- 16:30 **Discussion**
- 16:45 **Poster/Demo Session**

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13<sup>th</sup> December – All Day

### SESSION 4

- 10:00 **Technological innovations for a sustainable viticulture in Douro Wine Region**  
Rui Soares, Real Companhia Velha (Keynote speaker)
- 10:45 **Vineyard path segmentation from satellite imagery using machine learning for path planning**  
Luís Santos, INESC TEC
- 11:00 **Wine grape ripeness assessment using HSI and Artificial Intelligence**  
Véronique Gomes, UTAD
- 11:15 **Coffee-break**
- 11:30 **Assessing grapevine predawn leaf water potential from hyperspectral signatures and pigment's using machine learning algorithms: a framework tested in Douro wine region**  
Renan Tosin, INESC TEC
- 11:45 Debate
- 12:30 **Closing Session**  
Ana Barros (Director of CITAB)  
José Boaventura da Cunha (INESC TEC)  
Emídio Gomes (Vice-Rector of UTAD) - TBC  
Nuno Russo (Secretary of Estate of Agriculture and Rural Development) - TBC
- 13:00 **Lunch break**
- 14:30 **Technical visit to Quinta das Carvalhas (Pinhão)**