

# **2017 ICFAE CONFERENCE ABSTRACT**



**May 10-12, 2017  
NARIC Food Science Research Institute  
Budapest, Hungary**

# 2017 BUDAPEST CONFERENCE ABSTRACT

**May 10-12, 2017**

**NARIC Food Science Research Institute**

**Budapest, Hungary**



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# Keynote Speaker Introductions

## Keynote Speaker I



Prof. Raquel de Pinho Ferreira Guiné

Polytechnic Institute of Viseu, Portugal

**Prof. Raquel P. F. Guiné** has a degree in Chemical Engineering (1991), a MsC in Engineering Science (1997) and a PhD in Chemical Engineering (2005), all at the Faculty of Science and Technology of the University of Coimbra (Portugal). She has a Teaching Habilitation in Food Science (2015) from the University of Algarve (Portugal). She has a Certificate of Proficiency in English (CPE, 1986) by the University of Cambridge (United Kingdom). Her major fields of study include food engineering and food processing. She has been a University Teacher since 1994, being presently a Coordinating Professor with Habilitation at the Food Industry Department in Polytechnic Institute of Viseu – IPV (Portugal). She has been President of the Scientific Board; President of the Assembly of Representatives; Director of Licence Course, Director of MsC Course, and presently is Head of Department all at ESAV, IPV (Portugal). She is author of 14 books, 34 chapters, 142 research papers and 171 conference proceedings. She has authored 104 oral communications and 94 posters presented at scientific conferences. Selected published books: Vitamin C. Dietary Sources, Technology, Daily Requirements and Symptoms of Deficiency (New York, USA: Nova Science Publishers, 2013); Engineering Aspects of Cereal and Cereal-Based Products (Boca Raton, USA: CRC Press, 2013); Handbook of Fruit and Vegetable Flavors (New York, USA: John Wiley & Sons, 2010). Her research interests include areas such as food engineering, food processing, food properties, food chemistry and nutrition. Prof. Guiné is a member of the Portuguese Chemical Society (SPQ) and Asia-Pacific Chemical, Biological & Environmental Engineering Society (CBEES). Awards: 2011 – Research Project distinguished (Project lead by her); 2011 – Certificate of Excellence of paper published in Food and Bioproducts Processing in 2010; 2013 – First Prize in the National Contest sponsored by the CAP relative to a new food developed; 2015 – Certificate of Excellence for oral communication presented at 2nd International Conference on Food and Nutrition Technology (ICFNT 2015), Jeju Island, Republic of Korea; 2015 – Best Scientific Paper CI&DETS Published in 2014, in the Research Group in Food, Agrarian and Veterinary

Sciences; 2016 – Certificate of Best Oral Presentation for communication presented at the 2nd International Conference on Food and Agricultural Engineering (ICFAE 2016), Copenhagen, Denmark; 2016 – Third Prize in the Regional Contest Poliempreende relative to a new entrepreneurship idea. (URL: [www.raquelguine.pt](http://www.raquelguine.pt))

Topic: “*The Drying of Foods and its Effect on the Physical-Chemical, Sensorial and Nutritional Properties*”

Raquel P. F. Guiné

**Abstract**—Drying of foods is an ancient practice that has been adopted to preserve foods beyond their natural shelf life. Among the numerous methods used for food conservation, drying is unquestionably the most ancient but still very much used nowadays. The process started with the exposure of foods to the sun, to extract from them a great proportion of the water, thus contributing for their conservation. The traditional solar drying with direct exposure to the sun had many disadvantages and presently more modern methods are used, such as hot air drying, spray drying, lyophilization, infrared, microwave or radiofrequency drying, osmotic dehydration or many combined processes. In drying water is removed from the food, thus reducing its availability for degradation reactions of chemical, enzymatic or microbial nature.

The main objectives of drying include to preserve foods and increase their shelf life; avoid the need for use of refrigeration systems for transport and storage (expensive); reduce space requirements for storage and transport; diversify the supply of foods with different flavours and textures, thus offering the consumers a great choice when buying foods.

Many foods can be preserved through drying, but their organoleptic and nutritional properties are greatly altered as compared to the fresh counterparts. Thus, during drying it is of interest to minimize chemical changes, such as enzymatic and non-enzymatic browning, and to maximize nutrient retention, such as macronutrients (proteins, sugars, fibres, ...), micronutrients (vitamins, minerals, ...) or bioactive compounds (phenolic compounds, carotenoids, isoflavones, ...). One effect frequently observed when drying foods is shrinkage, which considerably affects their structure and texture.

This work describes the most relevant drying methods and advances in drying technology and the effects of this operation on the attributes of the dried foods, including physical characteristics, chemical components and nutritional value or sensory properties like aroma, texture and colour.