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## BOOK OF ABSTRACTS

XII IBEROAMERICAN  
CONGRESS OF FOOD ENGINEERING

# CHALLENGING FOOD ENGINEERING AS A DRIVER TOWARDS SUSTAINABLE FOOD PROCESSING

UNIVERSITY OF ALGARVE, GAMBELAS CAMPUS  
FARO / ALGARVE / PORTUGAL  
**1 > 4 JULY 2019**

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## ***“Challenging Food Engineering as a Driver Towards Sustainable Food Processing”***

**e-Book of Abstracts**

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# **Sustainable Alternative Food Processing Technologies**

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## **Physicochemical Aspects of Foods**

*Poster Communications*

## HOMEGREENS: Small-scaled aquaponics systems

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Aquaponic systems are based on a technique that involves fish farming and hydroponics farming techniques, producing both fish and plants (herbs, fruits or leafy greens) in the same circuit of water. The metabolism products from fish, passing through a healthy biofilter will generate natural fertilizer which is assimilated by the plants resulting in vegetable growth and simultaneously cleaning the water that returns to the fish tank, generating a symbiotic procedure involving fish, bacteria and plants. The public awareness of aquaponics is still very low and thus the importance of developing household systems that would serve as an introduction to future sustainable production aquaponic farms. In this project several domestic unit setups were tested and evaluated according to the plant growth and fish biomass increment, granting a domestic means to see biology working applied to sustainable and economically viable production. The referred household prototypes were designed and, some, were built permitting an evaluation on how each plant stage correlates with nutrient uptake, and to assess the need for further additives to promote plant growth. Ultimately the project will offer tools to enhance and enrich the current understanding and knowledge regarding the potential of aquaponics systems in producing food in a sustainable and economic way.

**Keywords:** Sustainable foods, Aquaponics, Urban agriculture, Food safety