Freshness REcording System for fish Quality Observation: THE FRESQO PROJECT
A.Kapantagakis, G. Katselis, E. Petra, P. Tsagkatakis, P. Tsakalides, N. Vlachos

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FRESQO PROJECT

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Partners:
- “Athena” Research Centre
- ICS – FORTH
- HCMR
- Department of Aquaculture and Fisheries / TEI of Western Greece

Budget: 572.680 euros
**BASIC PRINCIPLES**

- Spectroscopy (or hyperspectral imaging): acquisition of light-matter interactions across a wide spectral range.

- Benefits: accurate material identification and differentiation according to spectral profile, e.g., chemical alteration of tissues, oxygenation etc.

- Limitations:
  - Weights (tens of kilos), Cost (tens of thousands of euros), Usage limitations (moving platform requirements)
  - Need for analytical mathematical quantification of requested characteristics and relationships between features e.g., change in wavelength absorption as a function of specific concentration of chemical elements.
THE FRESQO APPROACH

- **Next-generation hyperspectral imaging cameras**
  Low weight (< 1Kgr), Intuitive User-Interface (point-and-shoot), Acquisition speed (full resolution photographs vs points)

- **Introduction of innovative machine learning architectures**
  - System training on annotated examples. Generalization to new examples during testing (inference)
  - Automated extraction of critical spatial and spectral characteristics
  - Adaptability to new problems and setups.
System operation

Machine Learning system

Repository

Day #1

Day #2

Day #3

Training examples

Test sample

2 days old
THANK YOU