



5th International Conference

on Water Economics Statistics and Finance

on Rethinking Treatment with Asset Management

22–24 SEPTEMBER 2021
PORTO · PORTUGAL

ORGANIZERS





5th International Conference

**on Water Economics,
Statistics and Finance**

**on Rethinking treatment
with Asset Management**

Conference's Venue: ISEP Congress Center

Rua Dr. António Bernardino de Almeida, 431 4200-072 Porto

Title

Book of Abstracts – IWA Conferences:

5th International Conference on Water Economics, Statistics and Finance (WESF)

IWA International Conference on Rethinking Treatment with Asset Management (RTAM)

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Parallel Sessions 8 A & 8 B

8 A - RTAM - Room H

Chair: **Cristina Delerue (ISEP, Portugal)**

Non-Thermal Plasma Treatment for Pharmaceuticals Removal from Municipal Wastewater - **E. Surra** (Requimte / ISEP, Portugal)

Biochar as a sustainable particulate electrode in a 3D electrochemical process to remove carbamazepine from aqueous sol. - **S. Figueiredo** (ISEP, P.)

Extracellular polymeric substances recovered from aerobic granular sludge - a natural mat. for different applications - **C. Amorim** (CBQF - UCP, Port.)

Microalgae-bacterial granular systems able to treat marine aquaculture water streams - **C. Amorim** (CBQF - UCP, Portugal)

Microalgae for Paper Industry Effluents Remediation - **I. Silva** (FEUP, Portugal)

8 B - 5th WESF - Auditório Magno

Chair: **Rita S. Brito (LNEC, Portugal)**

Performance assessment of water services in Brazilian municipalities: an integrated view of efficiency and access - **A. Camanho** (FEUP, Portugal)

Combining data clustering and stratified sampling for selecting customer's location for smart meter installation - **D. Loureiro** (IST - U. Lisboa, Port.)

Valuing urban drainage assets – aligning financial and technical procedures - **M. Almeida** (LNEC, Portugal)

A logistic network approach for optimizing sludge management under a circular economy perspective - **A. Henriques** (INESC TEC - FEUP, Portugal)

Energy efficiency of drinking water treatment process and its drivers using the StoNED approach - **M. Molinos-Senante** (Pont. Un. Católica / Chile)

15:00 - 16:30
90 min.

Microalgae-bacterial granular systems able to treat marine aquaculture water streams

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Abstract: This study aimed to evaluate the granulation of microalgae-bacterial biomass and its ability to treat marine aquaculture water streams. For this, a phototrophic consortium adapted to saline conditions was enriched from water collected from a marine aquaculture facility and then used to develop the microbial aggregates. Two lab-scale photo-reactors were used: one inoculated only with the enriched phototrophic consortium and the other with the consortium and activated sludge. Rapid granulation was achieved. High ammonium and organic carbon removals of about 100% and 80%, respectively, were quickly established and maintained in the long run. This study demonstrates the rapid granulation of phototrophic biomass and its robustness and feasibility for nutrient and carbon removal from extremely low loaded water streams.

Keywords: Microalgae-bacterial granules; marine aquaculture water streams.

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