



Project Progress

The last meeting of the project was held at the facilities of ProPhotonix, one of the consortium companies, in **March 2023**, the original end date of the project. However, a six-month extension was requested to compensate for the delay suffered during the pandemic.

As of today, we have entered the extension phase of the project and some of our PhD students have already completed their research contracts and are preparing to defend their theses.

This latest newsletter describes some of the scientific and outreach activities carried out in recent months.

Among them, the ***Final Showcase and International Workshop*** held in Jerez de la Frontera (Spain) and the last meeting held in Cork (Ireland).



✓ M43 meeting & Final Showcase and International Workshop in Jerez de la Frontera

M43 meeting and the Final Showcase and International Workshop were held in **Jerez de la Frontera** (Spain) on 24th-25 of October. It was a face-to-face encounter organised by Aqualia in Jerez. The Final International Workshop was well received by the city council of Jerez de la Frontera and the mayoress opened the event.



Photos taken during the presentation of the Final Showcase and International Workshop held in Jerez de la Frontera (Spain)

During the Workshop, all the students of the **REWATERGY** project had the opportunity to present their work and there were also three external researchers from the water-energy area. The first speaker was **Dr. Eduard Borràs**, Manager of Microbial & Electrochemical Technologies department from **LEITAT Technological Center** (Spain) who gave a talk about Bioelectrochemical Systems: providing solutions to the water-energy nexus challenges, who also participated in www.midesH2020.eu.

The second speaker was **Prof. Suresh C. Pillai**, Director, Health and Bio-Medical Centre & Head of Nanotechnology and Bio-Engineering Research Group, **Atlantic Technological University** (Ireland) who gave a talk about Semiconductor photocatalysis for anti-microbial applications. And the last speaker was **Prof. José Antonio Perales**, Full professor of Environmental Technologies at the **University of**



Photos taken in the Wastewater Treatment Plant situated in Guadalete during the celebration of the final International Workshop.

At the end of the day we visited one of the most emblematic Jerez wineries, of the José Estevez group (Bodega Valdespino), where we enjoyed the stud farm, art gallery and tasting of six Jerez wines. Finally we had a **social dinner** with all the participants.

The **General Assembly** was celebrated the next day at NH Avenida Jerez. We had the opportunity to hold a hybrid meeting to overview the most important topics that affect the development of the project.



Photos collected from the winery visit and M43 meeting hold in Jerez de la Frontera (Spain)

Press dissemination

The reception of the **Final International Workshop** by the city council of Jerez de la Frontera made headlines in some local newspapers.

- <https://andaluciainformacion.es/jerez/1099734/el-ayuntamiento-presentara-al-perte-del-agua-un-proyecto-para-modernizar-el-abastecimiento/>
- <https://cadenaser.com/andalucia/2022/10/24/seminario-internacional-sobre-la-mejora-de-la-eficiencia-energetica-en-el-sector-del-agua-radio-jerez/>
- https://www.diariodejerez.es/jerez/Comienza-seminario-proyecto-Rewatergy-Jerez_0_1732327020.html



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✓ M48 meeting in Cork



Photos collected from the M48 meeting hold in Cork (Ireland)

During the 48th month, we held the six-monthly **SA/SB meeting**. This meeting was celebrated on March 16th – 17th, 2023 and was organised and carried out in **ProPhotonix facilities** (Cork). During the meeting we had the opportunity to listen to the talks of our students and discussed with them scientific aspects.

On the other hand, an exhaustive review of all the points of the project was made, analysing the

completed items and setting the tasks for the closure of the project.

👤 Congresses

During the last months, our students participated in the following congresses.

- 🌀 **A. Rioja-Cabanillas, S. McMichael, P. Fernandez-Ibanez, J.A Byrne.** Photoelectrochemical H₂ production from urea in wastewater using WO₃. RSC Chemical Nanoscience and Nanotechnology Network Annual Symposium 26th-27th January 2023 14:00, London, (UK). Oral presentation.
RSC Travel grant. Best Oral presentation award.
- 🌀 **S. Perveen, C. Pablos, K. Reynolds, S. Stanley, and J. Marugán.** Bacterial community composition in a pilot-scale wastewater treatment plant. Environ 2023 - 33rd Irish Environmental Researchers Colloquium 03 - 05 Apr 2023. **Oral presentation**
- 🌀 **S. Perveen, C. Pablos, K. Reynolds, S. Stanley, and J. Marugán.** Microplastics in fresh- and wastewater are potential contributors to antibiotic resistance. Environ 2023 - 33rd Irish Environmental Researchers Colloquium 03 - 05 Apr 2023. **Flash presentation.**
- 🌀 **S. Perveen, C. Pablos, K. Reynolds, S. Stanley, and J. Marugán.** Microplastics in fresh- and wastewater are potential contributors to antibiotic resistance . Environ 2023 - 33rd Irish Environmental Researchers Colloquium 03 - 05 Apr 2023. **Poster presentation.**

Upcoming Congresses

- 🌀 **A. Rioja-Cabanillas, S. McMichael, J.A. Byrne, P. Fernandez-Ibanez.** Simultaneous oxidation of urea and production of hydrogen using photoelectrocatalysis. EMRS 2023 Spring Meeting - European Materials Research Society. Strasbourg, (FR). 29 May- 2 June 2023. **Oral presentation.**



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- 🌀 **R. Asiain-Mira, P. Zamora, V. M. Monsalvo, F. Rogalla, L. Torrente-Murciano.** Energy recovery from wastewater: ammonia and hydrogen production from nitrogen-containing waste streams. 6th IWA International Conference on eco-Technologies for Wastewater Treatment 26-29 June 2023. *Oral presentation.*
- 🌀 **R. Pizzichetti, C. Pablos, K. Reynolds, E. Moore, S. Stanley, J. Marugán.** Degradation of diclofenac by UV-B and UV-C LED driven AOPs processes. WCCE11 – 11th World congress of Chemical Engineering, Buenos Aires (Argentina), 4th-8th June 2023. Poster Presentation.
- 🌀 **R. Pizzichetti, C. Pablos, K. Reynolds, S. Stanley, E. Moore, J. Marugán.** Application of UV-B and UV-C light-emitting diodes (LEDs) for the removal of diclofenac in drinking water. EcoSTP2023. 6th IWA International Conference on eco-Technologies for Wastewater Treatment. Girona (Spain). Short-oral presentation.

Publications

REWATERGY has a new scientific publications available at the Zenodo repository site (<https://zenodo.org/communities/rewatergy/?page=1&size=20>).

- 📄 **A. Raffaella P. Pizzichetti,** Cristina Pablos, Carmen Álvarez-Fernández, Ken Reynolds, Simon Stanley, Javier Marugán. Kinetic and mechanistic analysis of membrane fouling in microplastics removal from water by dead-end microfiltration. Journal of Environmental Chemical Engineering 11 (2) (2023) 109338-109352.
<https://doi.org/10.1016/j.jece.2023.109338>

Dissemination and Communication activities

During these last months **REWATERGY** has been represented by our ESRs in several events.



Conor Reddick during the European Researchers' Night

The European Researchers' Night event

- **Shabila Perveen** participated in the **START (Start Talking about Research Today)** 2022 is Ireland's **European Researchers' Night**. The campaign used various social media platforms to highlight the research work of participating researchers. <https://www.start-ern.org/>
- **Adithya Pai Uppunakudru** and **Conor Reddick** attended the European Researcher's night in Madrid in September 2022

Participation in the MSCA EID Cluster

On the day 10th of November 2022, **MSCA EID Cluster Event** was organized by REA in close cooperation with the MSCA policy unit. The meeting was a great networking opportunity for a

growing interdisciplinary community involved in the implementation of industrial doctoral programs. The **REWATERGY** project was represented by an academic beneficiary (URJC), a non-academic beneficiary (AQUALIA) and an ERS, **Marina Maia** who participated in giving her testimony as PhD student of our project.

United Nations Conference on Climate Change (COP27)

From 6 to 20 November 2022, the twenty-seventh **United Nations Conference on Climate Change** in 2022 (**COP27**) was celebrated in Sharm el-Sheikh, Egypt. The PhD researcher **Raffaella Pizzichetti** attended the conference. At this Conference, delegates from the 190 participating countries of the world work to build ambitious, and needed, targets to stop climate change.



Press release

https://www.corkbeo.ie/news/cork-climate-activists-hope-make-25453825?utm_source=twitter.com&utm_medium=social&utm_campaign=sharebar

Northern Ireland Science Festival

Adriana Rioja and **Salem Alkharabsheh** participated in the annual **Northern Ireland Science Festival** (www.nisciencefestival.com). The annual event features a wide range of interactive workshops, talks and exciting hands-on activities from 16 - 26 February 2023. Adriana and Salem participated in “**Engineering Futures**”, an interactive event where students can get hands on experience and learn about how Engineering will help us to address Global Challenges including health care, water, sustainable communities, and climate change.

<https://nisciencefestival.com/schools-educators/engineering-futures#:~:text=Engineering%20Sustainable%20Futures%20is%20an,sustainable%20communities%20and%20climate%20change>



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Talks to students

On 23rd March 2023, **Shabila Perveen** had the opportunity to give a presentation about the application of UVLEDs in water disinfection to a group of visiting students from Minzu University of China. The objective of the demonstration was to introduce undergraduate students to research in the field of advanced water treatment technologies.



Shabila at ProPhotonix facilities giving a presentation to Minzu University students.



Awards

More awards!!!

Adriana Rioja was awarded the **Best oral presentation award** at the RSC Chemical Nanoscience and Nanotechnology Network Annual Symposium 26 - 27 January 2023, London, United Kingdom.

Other activities



REWATERGY website is updated with the last meetings, training courses, and dissemination events.

Visit our page at www.rewatergy.eu



The student's Blog can be visited from the website of **REWATERGY** (<http://rewatergy.eu/archivos/category/blog>). All students have actively participated in the generation of content and its publication in a Project Blog. During these years, 27 articles have been published on various topics monthly.

These last months our students wrote about:

- *Hydrogen Future?*
- *Imposter syndrome in Academia*
- *Gender impact of water resource management*
- *Renewable Energy: For a Safer Future*
- *European Researcher's Night 2022: Madrid*
- *ENVIRON Experience '22*



You can follow us in **@REWATERGY_EID**

Our Twitter follows **742** people, companies, and institutions, we have **383** followers, and we have posted **493** Tweets.