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Book of Abstracts

VisioNing: valorization of agro-industrial wastewater. From research bench to business.

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The escalating pollution caused by agro-industrial wastewater is an alarming environmental threat. Apart from the obvious water wastage, valuable nutrients within are also lost.¹ Besides that, processes able to treat emerging waste fluids, like the one coming from anaerobic digestion of biomass and biowaste, are still under scouting by many industrial actors, privates or corporates. The wastewater treatment sector and that of fertilizers' production account for over 3% and 1.2% of world's energy. Moreover, fertilizer costs are continually growing as they are related to the energy cost and population growth. This represents a significant economic damage to companies in the sector. The agro-industrial wastewater treatment market is witnessing a surge in interest towards efficient and sustainable technologies. In fact, technological innovation and the embrace of eco-friendly solutions are driving industry transformation. In this context, the mission of VisioNing is simple but ambitious: transforming wastewater from a problem to a resource with 100% circularity and sustainability.

VisioNing is a deeptech startup conceived and founded after a meticulous examination of the challenges in wastewater treatment. Combining synergistically spontaneous and low-energy demanding treatments, our process not only purifies wastewater but also recovers and reuses the nutrients it contains. While numerous wastewater treatment solutions exist, our combined technology offers dual benefits: energy efficiency and recyclability of water and added-value compounds in it. This empowers us to position ourselves as frontrunners in sustainability and innovation, pointing to a reduction in operational costs compared to traditional approaches. Having conducted in-depth research and developed prototypes at the University of Milan, we have now refined an operational and highly efficient pilot plant version.

Three pilots (500 L capacity, each) are operating, moved across several companies spread along the peninsula with different type of wastewater, and financed by the "Farming Future" investment fund of CDP Venture Capital SGR and ToSeed & Partners, confirming the preliminary results obtained in the Proof of Concept phase in terms of nutrients recovery and water purification.

References

- ¹ J. R. Jones, J. A. Downing, Agriculture. Encyclopedia of Inland Waters 2009, Volume, 225 – 223.