

Innovative methods for the recycling and reuse of contaminated water: the Nanowat project

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Abstract content {Max words limit 250}

Proposals for the reuse of alternative waters are of growing interest for regions stressed by scarce water availability. Collection, treatment and redistribution are some of the phases that require different purification actions, actions related to the water origin (eg. gray, rain, and/or industrial waters). It is known that wastewater contains both chemical and microbiological contaminants and for this reason, it is essential to have reliable control tools for assessing both risks (chemical and microbiological) for which, often, there is a lack of clear and comprehensive reference standards.

NANOWAT project (Diffusion of nanotechnology based devices for water treatment and recycling) has focused attention on the development and diffusion in the Mediterranean area of new technologies for efficient water treatment based on natural and modified nano-materials, using either filtration and sedimentation, photo-degradation, photocatalysis and their combination.

Pilot-scale mobile equipment for the treatment of different types of wastewater like pesticides, pharmaceuticals, and organic contaminants coming from industrial enterprises was developed and realized. In detail was carried out the filtration using both nano-structured clay-micelles and clay-vesicles to facilitate the immobilization of organic pollutants, microfibers and micro-plastics and successively on the recalcitrants compounds, still contained in the liquid phase after filtration treatment, were performed new photo-catalytic processes based on TiO₂ in suspension and/or on immobilized on glass. Results obtained were interesting and effective, however confirming the need to customize the wastewater purification procedure in relation to the type of contamination present.



**4th Global Summit On
Catalysis and Chemical Engineering**

**Chemical Catalyst 2023
- 4th Edition**

**April 13th & 14th, 2023
Hotel NH Roma Villa Carpegna, Rome, Italy**

Letter of Invitation/Acceptance

October 22, 2022

To
Dr. Laura Scrano,
University of Basilicata, Potenza, Italy.
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On behalf of our Organization, we hereby would like to invite as an **Honourable Board Member & Keynote Speaker** for the “**4th Global Summit on Catalysis and Chemical Engineering**” to be held during **April 13-14, 2023** at the **Hotel NH Roma Vila Carpegna, Rome, Italy**. We are sure your presence will enhance the experience of all who attend. We welcome you to join our conference as present on title

“Innovative methods for the recycling and reuse of contaminated water: the Nanowat project”

The “**Chemical Catalyst 2023**” highlights the theme “**Contemporary Innovations and Emerging Novel Research in Catalysis and Chemical Engineering**”. The program is an exquisite blend of Scientific Research Works with Renowned Keynote Speakers combined with Oral Presentations, lectures, panel discussions, debates by other renowned experts from the Catalysis & Chemical Engineering Community.

We welcome you to join us and share your knowledge and views

We look forward to seeing you in the conference.

With Best Regards

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