

# Novel Technologies for green synthesis and catalysis

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## Abstract

Our approach to modern green chemistry is focused on the general idea that green/efficient processes are those designed to minimize the waste by the rational combination of different technologies and the use of specific metrics needed to quantify the advance in terms of sustainability.

Our research program is mainly committed to the definition of efficient and sustainable synthetic tools by combining the development of several crucial areas of investigation: i) use of safer reaction media, ii) preparation and use of nanostructured heterogeneous and reusable catalytic systems; iii) definition of continuous-flow reactors allowing a minimal waste production and high productivity; iv) applications of metrics and LCA to assess the overall sustainability of the results.<sup>[1]</sup>

Among the different projects, we are currently dedicated attention to the valorisation of waste for the preparation of recoverable catalytic systems and electrodes to define efficient protocols based on the use of continuous-flow reactors and electrochemistry.

In this contribution it will be presented an overview of our vision and ongoing research in the field.



## Keywords

Green solvents, continuous-flow technologies, heterogeneous catalysis

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## References

[1] Some recent examples L. Vaccaro et al: *Chem. Sci.* **2024**, *15*, 3831-3871; *Green Chem.* **2024**, *26*, 4871-4879; *Green Chem.* **2024**, *26*, 7059-7066, hot article; *Green Chem.* **2024**, *26*, 7752-7758, hot article and invited front cover; *Green Chem.* **2024**, *26*, 6625–6633, *ACS Sus Chem. Eng.* **2024**, *12*, 22, 8562–8572.