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<u>Ph.D. project title</u>: Green Pharmaceuticals: development of new processes for a sustainable health.

<u>Research summary</u>: In 1998, Anastas and Warner introduced the concept of green chemistry. They postulated the 12 principles of green chemistry, with the aim of providing a guiding framework for the design of sustainable chemical processes. This research projects focuses mostly on the fifth principle, namely the use of safer solvents. Volatile organic compounds are still widely employed in chemistry, but considering their toxicity and their environmental impact, their use will be no more sustainable or even permitted for a long time. It is urgent to find new solutions, and the present project tackles this challenge. I am exploring the potential of different kinds of unconventional classes of solvents: solvents with improved health-profiles, bio-derived solvents obtainable from renewable biomasses, and Deep Eutectic Solvents, mixtures characterized by good thermal stability, low volatility and high biodegradability. These solvents will be tested as unconventional reaction media, also in industrial synthetic procedures of Newchem S.p.A. This project is developed in collaboration with this partner, that will host me during the third year of my doctoral research.

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