

Energy and environment: important role of chemistry in meeting the new demand for sustainable solutions

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Abstract

Sustainability has been worldwide recognized as the only possible bridge to the future, and chemistry has to be rethought in this new perspective. Materials production through chemical methods needs to be designed through sustainable actions, from the choice of primary resources to the efficiency of the synthesis process, from the functional performance of the materials to their present and future impact in society, environment, and economy. Apparently, this is an unaffordable goal. This presentation will give a chemistry perspective on sustainable materials for energy and environment, highlighting some little steps to take in the way toward sustainable development and discussing how chemistry can help to reach sustainable development goals, such as responsible consumption and production (n°12), affordable and clean energy (n°7), clean water and sanitation (n°6), sustainable cities and communities (n°11) and quality education (n°4).

Keywords: sustainability, sustainable development goals, materials synthesis, energy and environment, waste precursors, chemistry, mixed oxides, solution combustion synthesis.

Short biography

Dr. Francesca Deganello is researcher at CNR-ISMN Palermo (Italy) since 2001. In March 1996 she got the Chemistry degree at the Università degli Studi di Palermo (110/110 cum laude). In February 2002 she obtained her Ph.D certificate in Chemical Sciences at Università degli Studi di Palermo, Italy. She is involved in several national and international projects on the preparation and characterization of sustainable nanomaterials, especially mixed oxides with perovskite-type structure for solid oxide fuel cells operating at intermediate temperatures, for metal-air batteries, and for the degradation of pollutants in the air and in industrial wastewater. Dr. Deganello is the author of 37 peer reviewed scientific publications, 10 structures in the ICDD database, and about 60 oral, poster communications and invited presentations. She is also involved in outreach activities for schools and public.

