SHORT BIO:

Claudia Antonetti is Associate Professor of Industrial Chemistry at the University of Pisa. She obtained her five-year Master's Degree *cum laude* in Industrial Chemistry in 2006 at the University of Pisa and completed her Perfezionamento in Chemistry *cum laude* (equivalent to PhD) at the Scuola Normale Superiore in Pisa in 2010. During 2008-2009, she spent six months at the Department of Chemistry of the University of Cambridge (UK). In 2015, she completed the Master's program in Bioenergy and Environment at the University of Florence in collaboration with C.R.E.A.R. (Center for Research on Alternative and Renewable Energy).

The main research interests concern applied catalysis and sustainable chemistry, with particular focus on the synthesis, characterization and application of *ad-hoc* synthesized catalysts, as well as on the optimization of catalytic processes, including those involving commercial systems, for the valorization of biomasses, also including waste ones, and/or of the platform chemicals derived from them, always adopting a sustainability perspective.

In particular, Claudia Antonetti has investigated the synthesis, characterization and applications of nanostructured catalysts based on Ru, Pd, Au, Cu and Ag, developing extensive knowledge and expertise in their preparation under sustainable reaction conditions. The resulting systems have been studied in a wide range of reactions, in particular on hydrogenation processes. More recently, as Principal Investigator of the PRIN 2020 LEVANTE project, aimed at the valorization of levulinic acid through innovative technologies, Claudia Antonetti and her team have studied the synthesis of biomass-derived catalysts, achieving promising results towards sustainability and the circular economy.

In parallel, regarding the use of commercial catalysts, Claudia Antonetti has investigated their application in the catalytic conversion and valorization of several biomasses, including waste ones, under sustainable reaction conditions. The studied approaches involved the use of heterogeneous acidic systems, salts, mineral acids and metallic catalysts, achieving significant catalytic performances. In particular, these processes have been explored for the recovery of sugars and chemicals of major industrial interest, such as 5-hydroxymethylfurfural, furfural and levulinic acid, followed by their valorization as substrates for the production of biofuels, energy, chemicals and advanced plastic materials. This has been carried out through sustainable, low environmental impact processes, autocatalytic and/or catalytic ones, using conventional, microwave and/or ultrasonic reactors.

Finally, Claudia Antonetti has also participated in and/or collaborated on research in several European, National and Regional projects, focusing on process and product sustainability in a circular economy framework. Up to now, Claudia Antonetti is co-author of more than 70 scientific papers published in international journals, 2 patents and over 180 contributions at international and national conferences. She has a Scopus H-index of 34, with more than 3,400 citations in Scopus (March 2026).