

Title: Influences of self-heating and transport phenomena on the kinetic modeling of lignocellulosic fuel combustion



Carmen Branca is a researcher at the Combustion Research Institute of the National Research Council (CNR) of Italy since January 2008. After graduation in Chemical Engineering in 1997 at the University of Naples "Federico II" with a thesis on the influence of the mineral matter on the pyrolysis kinetics of wheat straw, she received the title of Doctor of Philosophy in Chemical Engineering from the same University in 2003, with a thesis on the reaction kinetics and products of wood devolatilization. Until 2007 Carmen Branca was a post-doc researcher at the Department of Chemical Engineering, University of Naples "Federico II". Since July 2006 she is a Teaching Assistant for the courses of "Dynamics and Control of Chemical Processes", and "Thermal Processes for Energy Conversion from Biomass and Waste" (degree courses in Chemical Engineering of the 'University of Naples "Federico II"), and she has also been co-supervisor of about 60 theses.

The research activities of Carmen Branca concern the thermochemical conversion processes of biomass, and in particular the understanding of biomass thermal degradation for the production of more usable renewable fuels and fine chemicals and the development of kinetic models and comprehensive transport models of biomass pyrolysis, gasification and combustion. The most recent activities in this field are about the pyrolytic runaway and self-controlled pyrolysis. Finally the response to fire of solid fuels, more specifically composite materials, is also within the field of her expertise. The results of the scientific activity of Carmen Branca are illustrated in 73 publications in international peer reviewed journals of high standard, with about 2900 citations and a h-index of 33.