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Preface to Giulio Sarti Festschrift

This Festschrift is an homage to Giulio C. Sarti, Chemical Engineering Professor at the University of Bologna, on the occasion of his 65th birthday. It is a pleasure and a honor for us to present this volume, which collects contributions from many authors who share his approach to both fundamental and applied research in the field.

Giulio Sarti was born in 1947, in Granarolo dell'Emilia, in the rural region around the city of Bologna in Italy, from a worker's family. Studying was a serious commitment for Giulio from the very beginning and you can still find today, on the shelves in his office, a copy of the Webster English Dictionary that is the prize he received when he was awarded as best Italian high school student, in 1965.

Uncommon within the Italian academic community, Giulio Sarti began his career by joining a department different from that in which he completed his graduate studies. Indeed, shortly after his graduation from the University of Bologna (UNIBO), in 1972, he was appointed Assistant Professor at the Chemical Engineering Department at the University "Federico II" in Naples, where, at that time, a strong group of professors was active, whose works would have deeply influenced the Italian Chemical Engineering community for the following decades. Only ten years later, he had the opportunity to enter the Department of Chemical Engineering at his home university, in Bologna, where he was appointed Full Professor in 1986. He is currently working at the recently established Department of Civil, Chemical, Environmental and Materials Engineering of UNIBO, where he guides a laboratory for membrane separations which counts on seven people in permanent staff, evenly distributed by gender. Giulio Sarti has been married to his wife Carla since 1972, and they have two sons.

Years spent at the University of Naples, working in thermodynamic and transport phenomena, were of fundamental importance for the development of his competence in both research and teaching. Among the collaborations Giulio Sarti was able to establish during that period, special places are certainly occupied by those with Gianni Astarita and Giuseppe Marrucci. The collaborations with both of them shaped the fundamental method that Sarti would later use in addressing problems in diffusion in polymers and membrane science for which he is known today. During his years at "Federico II", Sarti taught a rather tough course in undergraduate chemical engineering thermodynamics whose memory, we can testify, is still vivid in the minds of those who had the experience of being among his students at that time. Most of those students now occupy leading positions in the industry and academia.

Since he joined the Department at the UNIBO, Giulio Sarti has been teaching a course in advanced transport phenomena, which has been an essential step in the graduate education of many researchers who are now serving as lecturers or professors in chemical engineering institutes around the world. Giulio Sarti was elected Head of Department, by his colleagues at the University of Bologna, in 1986. In this position, he was committed to strengthen the Ph.D. program and the experimental activity in the Department; during his eight

years in service as Head, the floor area of the laboratory of the Chemical Engineering Department at UNIBO was increased 10-fold. From 1997 to 1999, Giulio Sarti directed the academic society GRICU, which groups all Italian University researchers in Chemical Engineering, and he participated on the Editorial Board of the journal *Separation and Purification Methods* from 1998 to 2003. Since 2008, he has been a member of the Academy of Science of Bologna Institute, founded in 1690.

Giulio Sarti has kept very strong links with the international community of chemical engineering, especially with departments in U.S. universities. In his career, he spent sabbatical periods for both research and teaching activities at the University of California at Davis (fall semester, 1978) and the University of Texas at Austin (fall semester, 2006), and twice at North Carolina State University (fall semester, 1972, and fall semester, 2007). From the mid-1980s to present day, he has presented contributions to almost all of the American Institute of Chemical Engineers (AIChE) annual meetings, many North American Membrane Society (NAMS) meetings, and several American Chemical Society (ACS) national conferences. For one of these contributions, related to "Predictive Calculation of the Solubility of Gases and Vapors in Glassy Polymer Blends", the American Chemical Society conferred him the A.K. Doolittle Award in 2001.

Giulio Sarti has a recognized deep competence in the use of tools of continuum mechanics and classical thermodynamics, which allowed him to have a fundamental approach to all problems and applications that he has addressed in transport phenomena. He is admired by all his collaborators for his self-discipline, his rigorous approach to the chemical engineering studies, and his uncommon capacity of hard working. He also has remarkable ability in personal relationships, and, working close to him, we all have been quickly impressed by the number of colleagues of whom he was able to gain respect and confidence. This volume is indeed a straightforward product of his work in the academic community and of his personality, at the same time.

Major efforts in the work by Giulio Sarti were devoted to the fundamental analysis of mass transport processes in polymeric systems. From his research activities, significant contributions have come to the field of both modeling and experimental characterization of thermodynamic and mass transport properties in glassy polymer-solute systems. In collaboration with Prof. Gianni Astarita, he developed models for the description of non-Fickian sorption phenomena and for the so-called Case II diffusion kinetics. More recently, on the same general topic, Sarti found the collaboration of those who are writing this preface, who feel indebted to him for all they know in addressing academic research and teaching. Together with Prof. Carlo Gostoli and Serena Bandini at UNIBO, in the 1980s and

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1990s, Giulio Sarti studied both fundamental problems and applications development in membrane separation processes, ranging from gas separation to membrane distillation and reverse osmosis. Lately, in collaboration with Cristiana Boi, the last researcher who joined his group, Sarti also has devoted his research efforts to the field of bioseparation and, specifically, to protein purification by means of affinity membranes.

The same topics can be easily recognized in the list of papers collected in this volume, for which we extend our gratitude to Don Paul and *Industrial & Engineering Chemistry Research*.

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Notes

Views expressed in this preface are those of the authors and not necessarily the views of the ACS.

The authors declare no competing financial interest.