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Nota di contenuto	TRANSPORT PHENOMENA FOR CHEMICAL REACTOR DESIGN; CONTENTS; PREFACE; PART I ELEMENTARY TOPICS IN CHEMICAL REACTOR DESIGN; 1 Multiple Chemical Reactions in Plug Flow Tubular Reactors and Continuous Stirred Tank Reactors; 1-1 Gas-Phase Plug-Flow Tubular Reactors That Produce Triethanolamine from Ethylene Oxide and Ammonia; 1-2 Multiple Chemical Reactions in a Liquid-Phase CSTR; 1-3 Multiple Chemical Reactions in a CSTR Train; Problems; 2 Start Up Behavior of a Series Configuration of Continuous Stirred Tank Reactors; 2-1 Analysis of Multiple Reactions in Two CSTRs: Illustrative Problem 2-2 Analysis of a Train of Five CSTRs: Illustrative Problem Problems; 3 Adiabatic Plug-Flow Tubular Reactor That Produces Methanol Reversibly in the Gas Phase from Carbon Monoxide and Hydrogen; 3-1 Temperature-Averaged Specific Heats; 3-2 Conversion Dependence of Mass Fraction and Heat Capacity of the Mixture; 3-3 Plug-Flow Mass Balance in Terms of CO Conversion; 3-4 Thermal Energy Balance for a Differential Reactor; 3-5 Thermodynamics of Multicomponent Mixtures;

3-6 Coupled Heat and Mass Transfer; 3-7 Kinetics and Thermodynamics of Elementary Reversible Reactions in the Gas Phase
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Sommario/riassunto

Laurence Belfiore's unique treatment meshes two mainstream subject areas in chemical engineering: transport phenomena and chemical reactor design. Expressly intended as an extension of Bird, Stewart, and Lightfoot's classic Transport Phenomena, and Froment and Bischoff's Chemical Reactor Analysis and Design, Second Edition, Belfiore's unprecedented text explores the synthesis of these two disciplines in a manner the upper undergraduate or graduate reader can readily grasp. Transport Phenomena for Chemical Reactor Design approaches the design of chemical reactors from microscopi
