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Nota di contenuto	Front Cover; Pinch Analysis and Process Integration; Copyright page; Contents; Foreword; Foreword to the first edition; Preface; Acknowledgements; Figure acknowledgements; Chapter 1: Introduction; 1.1 What is pinch analysis?; 1.2 History and industrial experience; 1.3 Why does pinch analysis work?; 1.4 The concept of process synthesis; 1.5 The role of thermodynamics in process design; 1.5.1 How can we apply thermodynamics practically?; 1.5.2 Capital and energy costs; 1.6 Learning and applying the techniques; Chapter 2: Key concepts of pinch analysis; 2.1 Heat recovery and heat exchange 2.1.1 Basic concepts of heat exchange 2.1.2 The temperature-enthalpy diagram; 2.1.3 Composite curves; 2.1.4 A targeting procedure: the ""Problem Table""; 2.1.5 The grand composite curve and shifted composite curves; 2.2 The pinch and its significance; 2.3 Heat exchanger network design; 2.3.1 Network grid representation; 2.3.2 A ""commonsense"" network design; 2.3.3 Design for maximum energy recovery; 2.3.4 A word about design strategy; 2.4 Choosing T[sub (min)]: supertargeting; 2.4.1 Further implications of the choice of T

Sommario/riassunto

Pinch analysis and related techniques are the key to design of inherently energy-efficient plants. This book shows engineers how to understand and optimize energy use in their processes, whether large or small. Energy savings go straight to the bottom line as increased profit, as well as reducing emissions.This is the key guide to process integration for both experienced and newly qualified engineers, as well as academics and students. It begins with an introduction to the main concepts of pinch analysis, the calculation of energy targets for a given process, the pinch temperature and