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Sommario/riassunto

This book, 'Mathematical Modeling of Complex Reaction Systems in the Oil and Gas Industry', edited by Jorge Ancheyta, Andrey Zagoruiko, and Andrey Elyshev, provides a comprehensive overview of mathematical modeling techniques applied to complex chemical reaction systems within the oil and gas sector. It covers a wide range of topics, including kinetic modeling of hydrocracking, catalyst deactivation, oxidative regeneration of coked catalysts, and novel reactor designs. The book aims to equip researchers and industry professionals with advanced modeling tools to optimize processes such as heavy oil upgrading and hydrotreating for green diesel production. It is suitable for scientists, engineers, and academics involved in petrochemical research and development.