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Nota di contenuto	Front Cover; CRUDE OIL FOULING; Copyright; CONTENTS; LIST OF CONTRIBUTORS; PREFACE; NOMENCLATURE; ROMANS; GREEK; SUBSCRIPTS; SUPERSCRIPTS; ABBREVIATIONS; Chapter One - Introduction; 1.1 CRUDE DISTILLATION UNITS IN OIL REFINERIES; 1.2 IMPACT OF FOULING ON CRUDE DISTILLATION UNITS; 1.3 CONCLUDING REMARKS; Chapter Two - Basic Science of the Fouling Process; 2.1 FOULING MECHANISMS; 2.2 ROUTES TO CRUDE OIL FOULING FORMATION; 2.3 EVENTS IN CRUDE OIL FOULING; 2.4 VARIABLES AFFECTING FOULING; 2.5 CONCLUSIONS; Chapter Three - Experimental Generation of Fouling Deposits 3.1 SMALL SCALE, ACCELERATED CONDITIONS: MICROBOMB FOULING TESTS3.2 BATCH SYSTEM: STIRRED CELL AT THE UNIVERSITY OF BATH; 3.3 LARGE-SCALE EXPERIMENTS IN FLOW SYSTEMS; Chapter Four - Deposit Characterization and Measurements; 4.1 ANALYSIS OF FIELD FOULING DEPOSITS FROM CRUDE HEAT EXCHANGERS; 4.2 CHEMICAL

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	STRUCTURE AND MOLECULAR WEIGHT CHARACTERIZATION; 4.3 CHEMICAL IMAGING OF DEPOSITED FOULANTS AND ASPHALTENES; 4.4 FLUID DYNAMIC GAUGING: THICKNESS AND STRENGTH MEASUREMENTS; Chapter Five - Modeling of Fouling from Molecular to Plant Scale 5.1 REVIEW OF HEAT EXCHANGER DESIGN METHODOLOGIES AND MATHEMATICAL MODELS OF FOULING5.2 THERMODYNAMIC AND MOLECULAR MODELING; 5.3 FUNDAMENTAL TRANSPORT MODELING; 5.4 INDUSTRIAL SCALE HIGH-FIDELITY MODELING; Chapter Six - Concluding Remarks; APPENDIX 1; REFERENCES; INDEX
Sommario/riassunto	With production from unconventional rigs continuing to escalate and refineries grappling with the challenges of shale and heavier oil feedstocks, petroleum engineers and refinery managers must ensure that equipment used with today's crude oil is protected from fouling deposits Crude Oil Fouling addresses this overarching challenge for the petroleum community with clear explanations on what causes fouling, current models and new approaches to evaluate and study the formation of deposits, and how today's models could be applied from lab experiment to onsite field usability for not just the refi