1. Record Nr. UNINA9910823423203321

Titolo	Fluid mechanics and pipe flow : turbulence, simulation, and dynamics / / Donald Matos and Cristian Valerio, editors
Pubbl/distr/stampa	New York, : Nova Science Publishers, 2009
ISBN	1-61668-990-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (483 p.)
Altri autori (Persone)	MatosDonald ValerioCristian
Disciplina	620.1/06
Soggetti	Fluid mechanics Pipe - Fluid dynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""FLUID MECHANICS AND PIPE FLOW:TURBULENCE, SIMULATION AND DYNAMICS""; ""FLUID MECHANICS AND PIPE FLOW:TURBULENCE, SIMULATIONAND DYNAMICS""; ""CONTENTS""; ""PREFACE""; ""SOLUTE TRANSPORT, DISPERSION, AND SEPARATIONIN NANOFLUIDIC CHANNELS""; ""Abstract""; ""1. Introduction""; ""2. Nomenclature""; ""3. Fluid Flow in Nanochannels""; ""3.1. Electroosmotic Flow""; ""3.2. Pressure-Driven Flow""; ""4. Solute Transport in Nanochannels""; ""5. Solute Dispersion in Nanochannels""; ""5.1. Electroosmotic Flow""; ""5.2. Pressure-Driven Flow""; ""5.3. Neutral Solutes"" ""6. Solute Separation in Nanochannels""""6.1. Selectivity""; ""6.2. Plate Height""; ""6.3. Resolution""; ""7. Conclusion""; ""References""; ""H2O IN THE MANTLE: FROM FLUID TO HIGH-PRESSURE HYDROUS SILICATES""; ""Abstract""; ""Introduction""; ""Samples and Collected Data""; ""Sample Description""; ""H2O Content in the Olivine Samples""; ""Extrinsic H2O in Olivine Samples""; ""Discussion""; ""Olivine as Water Storage in the Mantle""; ""Post-Crystallization H2O Behavior in Olivine""; ""H2O Fluid in Kimberlite Melt""; ""OH-Bearing Nanoinclusions and Intracrystalline H2O Fluid""; ""Conclusion"" ""References""""ON THE NUMERICAL SIMULATION OF TURBULENCE MODULATION IN TWO-PHASE FLOWS""; ""Abstract""; ""Introduction""; ""Conservation Equations""; ""3.1. Gas-Particle and Liquid-Particle Flows""; ""3.1.1. Governing Equations for Carrier Phase Modeling"";

""3.1.2. Governing Equations for Particulate Phase Modeling""; ""3.1.3. Turbulence Modeling for Carrier Phase""; ""3.1.4. Turbulence Modeling for the Dispersed Phase""; ""3.2. Liquid-Air Flows (Micro-bubble)""; ""3.2.1. Inhomogeneous Two-Fluid Model""; ""3.2.1.1. Mass Conservation""; ""3.2.1.2. Momentum Conservation""
""3.2.1.3. Interfacial Area Density""""3.2.2. MUSIG Model""; ""3.2.2.1. MUSIG Break-up Rate""; ""3.2.2.2. MUSIG Coalescence Rate""; ""Numerical Procedure""; ""Numerical Predictions""; ""Gas Particle Flow""; ""4.1. Code Verification""; ""4.1.1. Mean Streamwise Velocities""; ""4.1.2. Mean Streamwise Fluctuations""; ""4.2. Results and Discussion""; ""4.2.1. Turbulence Modulation (TM)""; ""4.2.1.1. Analysis of Experimental Data""; ""4.2.2. TM & (Particle Number Density) PND Results""; ""4.2.3. Effect of Particle Reynolds Number on TM""; ""Liquid Particle Flow""
""5.1. Analysis of Experimental Data""""5.2. Numerical Code Validation""; ""5.3. Results and Discussion""; ""5.4.1. Particle Response-Mean Velocity Level""; ""5.4.2. Particle Response-Turbulence Level""; ""5.4.3. Summary of Particulate Responsitivity""; ""Air-Liquid Flows""; ""6.1. Results and Discussion""; ""6.1.1. Experimental Validation (Inhomogeneous Model)""; ""6.1.2. Investigation of Mechanisms of Drag Reduction""; ""6.1.3. Turbulence Modulation (TM)""; ""6.1.3. Effect of Bubble Coalescence and Break-up in Drag Reduction""; ""Conclusion""; ""Untitled""
""A REVIEW OF POPULATION BALANCE MODELLING FOR MULTIPHASE FLOWS: APPROACHES,APPLICATIONS AND FUTURE ASPECTS""