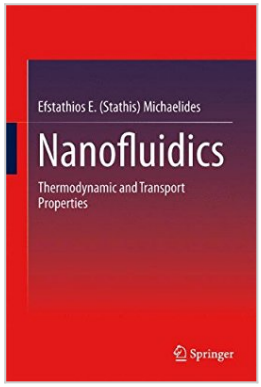

Nanofluidics: Thermodynamic and Transport Properties

By Efstathios E. (Stathis) Michaelides

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This volume offers a comprehensive examination of the subject of heat and mass transfer with nanofluids as well as a critical review of the past and recent research projects in this area. Emphasis is placed on the fundamentals of the transport processes using particle-fluid suspensions, such as nanofluids. The nanofluid research is examined and presented in a holistic way using a great deal of our experience with the subjects of continuum mechanics, statistical thermodynamics, and non-equilibrium thermodynamics of transport processes. Using a thorough database, the experimental, analytical, and numerical advances of recent research in nanofluids are critically examined and connected to past research with medium and fine particles as well as to functional engineering systems. Promising applications and technological issues of heat/mass transfer system design with nanofluids are also discussed.

This book also:

- Provides a deep scientific analysis of nanofluids using classical thermodynamics and statistical thermodynamics to explain and interpret experimental observations
- Presents the theory and experimental results for both thermodynamic and transport properties
- Examines all transport properties and transport processes as well as their relationships through the pertinent macroscopic coefficients
- Combines recent knowledge pertaining to nanofluids with the previous fifty years of research on particulate flows, including research on transient flow and heat transfer of particulate suspensions
- Conducts an holistic examination of the material from more than 500 archival publications

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- Sales Rank: #5523744 in Books
- Published on: 2014-05-19
- Original language: English
- Number of items: 1
- Dimensions: 9.20" h x 1.00" w x 6.10" l, .0 pounds
- Binding: Hardcover
- 335 pages

Editorial Review

From the Back Cover

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From reader reviews:

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James Donovan:

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Homer Smith:

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