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Titolo	Heat Pipe Design and Technology : Modern Applications for Practical Thermal Management / / by Bahman Zohuri
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ISBN	3-319-29841-0
Edizione	[2nd ed. 2016.]
Descrizione fisica	1 online resource (537 p.)
Disciplina	621.4022
Soggetti	Energy systems Thermodynamics Heat engineering Heat - Transmission Mass transfer Building construction Fluid mechanics Energy Systems Engineering Thermodynamics, Heat and Mass Transfer Building Physics, HVAC Engineering 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 at the end of each chapters and index.
Nota di contenuto	Introduction -- Basic Principles of Heat Pipes and History -- Heat Pipe Theory and Modeling -- Mathematical Modeling and Available Computer Codes -- Application of Heat Pipes in Industry -- Heat Pipe Manufacturing -- Other Types of Heat Pipes -- Appendix A: Dimensional Equivalents and Physical Constants -- Appendix B: Properties of Solid Materials -- Appendix C: Properties of Fluids -- Appendix D: Different Heat Pipe Design Examples -- Index.
Sommario/riassunto	This book provides a practical study of modern heat pipe engineering, discussing how it can be optimized for use on a wider scale. An introduction to operational and design principles, this book offers a review of heat and mass transfer theory relevant to performance,

leading into and exploration of the use of heat pipes, particularly in high-heat flux applications and in situations in which there is any combination of non-uniform heat loading, limited airflow over the heat generating components, and space or weight constraints. Key implementation challenges are tackled, including load-balancing, materials characteristics, operating temperature ranges, thermal resistance, and operating orientation. With its presentation of mathematical models to calculate heat transfer limitations and temperature gradient of both high- and low-temperature heat pipes, the book compares calculated results with the available experimental data. It also includes a series of computer programs developed by the author to support presented data, aid design, and predict performance. Revised edition of classic resource now includes all new practical examples, added chapters on leading-edge applications of heat pipes in aerospace, nuclear and solar systems. Features complete coverage of this foundational technology, a proven energy-saving solution for passive thermal control. New examination of numerical investigation of hydrodynamics and thermal performance of specially configured heat pipes for high-temperature thermal energy storage systems.

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