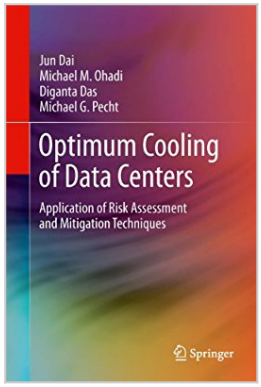

Optimum Cooling of Data Centers: Application of Risk Assessment and Mitigation Techniques

By Jun Dai, Michael M. Ohadi, Diganta Das, Michael G. Pecht

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This book describes the use of free air cooling to improve the efficiency of, and cooling of, equipment for use in telecom infrastructures. Discussed at length is the cooling of communication installation rooms such as data centers or base stations, and this is intended as a valuable tool for the people designing and manufacturing key parts of communication networks. This book provides an introduction to current cooling methods used for energy reduction, and also compares present cooling methods in use in the field. The qualification methods and standard reliability assessments are reviewed, and their inability to assess the risks of free air cooling is discussed. The method of identifying the risks associated with free air cooling on equipment performance and reliability is introduced. A novel method of assessment for free air cooling is also proposed that utilizes prognostics and health management (PHM).

This book also:

Describes how the implementation of free air cooling can save energy for cooling within the telecommunications infrastructure.

Analyzes the potential risks and failures of mechanisms possible in the implementation of free air cooling, which benefits manufacturers and equipment designers.

Presents prognostics-based assessments to identify and mitigate the risks of telecommunications equipment under free air cooling conditions, which can provide the early warning of equipment failures at operation stage without disturbing the data centers' service.

Optimum Cooling for Data Centers is an ideal book for researchers and engineers interested in designing and manufacturing equipment for use in telecom infrastructures.

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Editorial Review

From the Back Cover

This book provides data center designers and operators with methods by which to assess and mitigate the risks associated with utilization of optimum cooling solutions. The goal is to provide readers with sufficient knowledge to implement measures such as free air cooling or direct liquid immersion cooling properly, or combination of existing and emerging cooling technologies in data centers, base stations, and server farms.

This book also:

Discusses various telecommunication infrastructures, with an emphasis on data centers and base stations

Covers the most commonly known energy and power management techniques, as well as emerging cooling solutions for data centers

Describes the risks to the electronic equipment fitted in these installations and the methods of risk mitigation

Devotes a particular focus to an up-to-date review of the emerging cooling methods (such as free air cooling and direct liquid immersion cooling) and tools and best practices for designers, technology developers, installation operators, and owners

Informs installation designers and manufacturers of the benefits and limitations of the most common existing and emerging cooling methods

Optimum Cooling of Data Centers: Application of Risk Assessment and Mitigation Techniques is an ideal book for researchers and engineers interested in design, manufacturing, and optimum operation of cooling solutions for telecom and other mission-critical infrastructures.

Users Review

From reader reviews:

Melvin Loch:

The event that you get from Optimum Cooling of Data Centers: Application of Risk Assessment and Mitigation Techniques is the more deep you searching the information that hide into the words the more you get considering reading it. It doesn't mean that this book is hard to comprehend but Optimum Cooling of Data Centers: Application of Risk Assessment and Mitigation Techniques giving you enjoyment feeling of reading. The author conveys their point in certain way that can be understood by means of anyone who read that because the author of this publication is well-known enough. This particular book also makes your own vocabulary increase well. Making it easy to understand then can go along, both in printed or e-book style are available. We suggest you for having that Optimum Cooling of Data Centers: Application of Risk Assessment and Mitigation Techniques instantly.

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Clarence Williams:

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