1. Record Nr. UNINA9910438308503321

Autore	Ahlers Mark F.
Titolo	Aircraft thermal management : systems architectures / / by Mark F. Ahlers
Pubbl/distr/stampa	Warrendale, Pennsylvania (400 Commonwealth Dr., Wallendale PA USA) : , : Society of Automotive Engineers, , 2016 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2016]
ISBN	0-7680-8726-0 0-7680-8297-8 1-5231-0631-X
Descrizione fisica	1 online resource (v, 99 pages) : illustrations
Collana	PT ; ; 177 Society of Automotive Engineers. Electronic publications
Disciplina	629.134
Soggetti	Aerothermodynamics Aerodynamic heating
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Aircraft thermal management-heat sink challenge (2014-01-2193) / Dooley, M., Lui, N., Newman, R., and Lui, C -- 2. Integrated aircraft thermal management & power generation: Reconfiguration of a closed loop air cycle system as a Brayton cycle gas generator to support auxiliary electric power generation (2014-01-2192) / Abolmoali, P., Parrilla, J., and Hamed, A -- 3. Aircraft integration challenges and opportunities for distributed intelligent control, power, thermal management, diagnostic and prognostic systems (2014-01-2161) / Behbahani, A., Von Moll, A., Zeller, R., and Ordo, J -- 4. Thermal management investigations for fuel cell systems on-board commercial aircraft (2013-01-2274) / Vredenborg, E., and Thielecke, F -- 5. Power and thermal management for future aircraft (2013-01-2273) / Ganev, E., and Koerner, M -- 6. A highly stable two-phase thermal management system for aircraft (2012-01-2186) / Chen, W., Fogg, D., Izenson, M., and Kurwitz, C -- 7. Thermal management and power generation for directed energy weapons (2010-01-1781) / Patel, V. P., Koerner, M., Loeffelholz, D -- 8. Comparative analysis of thermal

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Sommario/riassunto

Aircraft thermal management (ATM) is increasingly important to the design and operation of commercial and military aircraft due to rising heat loads from expanded electronic functionality, electric systems architectures, and the greater temperature sensitivity of composite materials compared to metallic structures. It also impacts engine fuel consumption associated with removing waste heat from an aircraft. More recently the advent of more electric architectures on aircraft, such as the Boeing 787, has led to increased interest in the development of more efficient ATM architectures by the commercial airplane manufacturers. The ten papers contained in this book describe aircraft thermal management system architectures designed to minimize airplane performance impacts which could be applied to commercial or military aircraft. Additional information on Aircraft Thermal Management System Architectures is available from SAE AIR 5744 issued by the AC-9 Aircraft Environmental System Committee and the SAE book Aircraft Thermal Management Integrated Analysis (PT-178). SAE AIR 5744 defines the discipline of aircraft thermal management system engineering while Aircraft Thermal Management Integrated Analysis discusses approaches to computer simulation of the simultaneous operation of all systems affecting thermal management on an aircraft.