

The following are selected readings for superalloy alloy development reviewed by an advisory group of TMS subject matter experts



PAPER TITLE	AUTHOR(S)	SOURCE	MORE
"Joint Development of a Fourth Generation Single Crystal Superalloy"	<i>S. Walston, A. Cetel, R. MacKay, K. O'Hara, D. Duhl, and R. Dreshfield</i>	Superalloys 2004, Warrendale, PA: TMS, 2004, p. 15-24	Link to Proceedings
"Rene N6: Third Generation Single Crystal Superalloy"	<i>W. S. Walston, K. S. O Hara, E. W. Ross, T. M. Pollock, and W. H. Murphy</i>	Superalloys 1996, Warrendale, PA: TMS, p. 27-34	Read the Full Article
"The Development and Application of CMSX®-10"	<i>G. L. Erickson</i>	Superalloys 1996, Warrendale, PA: TMS, 1996, p. 35-44	Read the Full Article
"Development of the Rhenium Containing Superalloys CMSX-4® & CM 186 LC® for Single Crystal Blade and Directionally Solidified Vane Applications in Advanced Turbine Engines"	<i>K. Harris, G. L. Erickson, S. L. Sikkenga, W. D. Brentnall, I. M. Aurrecochea and K. G. Kubarych</i>	Superalloys 1992, Warrendale, PA: TMS, 1992, p. 297-306	Read the Full Article
"AIM: A New Method for Developing Disc Materials"	<i>D. G. Bachman, D. P. Mourer, K. R. Bain, and W. S. Walston</i>	Advanced Materials and Processes for Gas Turbines, Warrendale, PA: TMS, p. 255-264	Link to Proceedings
"Development of a New Alloy for Directional Solidification of Large Industrial Gas Turbine Blades"	<i>X. L. Yang, P. D. Lee, R. F. Brooks, R. Wunderlich</i>	Superalloys 2004, Warrendale, PA: TMS, 2004, p. 25-34	Link to Proceedings
"Development of Next-Generation Ni-Base Single Crystal Superalloys"	<i>Y. Koisumi, t. Kobayashi, T. Yokokawa, Z. Jianxin, M. Osawa, H. Harada, Y. Aoki, and M. Arai</i>	Superalloys 2004, Warrendale, PA: TMS, p. 35-44	Link to Proceedings
"Development of Ni-Based Single Crystal Superalloys for Power-Generation Gas Turbines"	<i>R. Hashizume, A. Yoshinari, T. Kiyono, Y. Murata, and M. Morinaga</i>	Superalloys 2004, Warrendale, PA: TMS, 2004, p. 53-62	Link to Proceedings
"Developing Damage Tolerance and Creep Resistance in a High Strength Nickel Alloy for Disc Applications"	<i>M. C. Hardy, B. Zirbel, G. Shen, and R. Shankar</i>	Superalloys 2004, Warrendale, PA: TMS, p. 83-90	Link to Proceedings
"Alternate Material for Elevated Temperature Turbine Cooling Plate Applications"	<i>J. R. Groh and D. P. Mourer</i>	Superalloys 2004, Warrendale, PA: TMS, p. 101-108	Link to Proceedings
"Development and Characterization of a Damage Tolerant Microstructure for a Nickel Base Turbine Disc Alloy"	<i>R.M. Kearsey, A.K. Koul, J.C. Beddoes and C. Cooper</i>	Superalloys 2000, Warrendale, PA: TMS, p. 117-126	Read the Full Article
"Advanced Superalloys and Tailored Microstructures for Integrally Cast Turbine Wheels"	<i>R.C. Helmink,, R.A. Testin, A.R. Price, R. Pachman, G.L. Erickson, K. Harris, J.A. Nesbitt and J.F. Radavich</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 171-179	Read the Full Article
"Development of a Third Generation DS Superalloy"	<i>T. Kobayashi, M. Sato, Y. Koizumi, H. Harada, T. Yamagata, A. Tamura and J. Fujioka</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 323-328	Read the Full Article
"The Development and Long-Time Structural Stability of a Low Segregation Hf Free Superalloy - DZ125L"	<i>Y. Zhu, J.F. Radavich, Z. Zheng, X. Ning, L. Lou, X. Xie and C. Shi</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 329-339	Read the Full Article
"Development of a New Single Crystal Superalloy for Industrial Gas Turbines"	<i>T. Hino, T. Kobayashi, Y. Koizumi, H. Harada and T. Yamagata</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 729-736	Read the Full Article
"High γ' Solvus New Generation Nickel-Based Superalloys for Single Crystal Turbine Blade Applications"	<i>P. Caron</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 737-746	Read the Full Article
"Development of A Low Angle Grain Boundary Resistant Single Crystal Superalloy YH61"	<i>H. Tamaki, A. Yoshinari, A. Okayama and S. Nakamura</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 757-766	Read the Full Article
"A Low-Cost Second Generation Single Crystal Superalloy DD6"	<i>J.R. Li, Z.G. Zhong, D.Z. Tang, S.Z. Liu, P. Wei, P.Y. Wei, Z.T. Wu, D. Huang and M. Han</i>	Superalloys 2000, Warrendale, PA: TMS, p. 777-783	Read the Full Article
"Development of New Nitrided Nickel-Base Alloys for High Temperature Applications"	<i>C.D. Penna</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 821-828	Read the Full Article
"MC-NG: A 4th Generation Single-Crystal Superalloy for Future Aeronautical Turbine Blades and Vanes"	<i>D. Argence, C. Vernault, Y. Desvallees and D. Fournier</i>	Superalloys 2000, Warrendale, PA: TMS, 2000, p. 829-837	Read the Full Article