TMS

Recommended Readings: Properties and Reliability of Lead-Free Solders

The following are recommended readings on properties and reliability of lead-free solders from an advisory group of TMS subject matter experts

TECHNICAL AREA	PAPER TITLE	AUTHOR(S)	SOURCE	
Mechanical Properties and Fatigue	*Effects of Cooling Rate on Creep Behavior of a Sn-3.5Ag Alloy*	F. Ochoa, X. Deng, and N. Chawla	J. Elec. Mater., vol. 33, 2004, pp. 1596-1607.	[view abstract]
	Creep Deformation Behavior of a Sn-3.5Ag Solder/Cu Couple at Small Length Scales	M. Kerr and N. Chawla	Acta Mater., vol. 52, 2004, pp. 4527-4535	[view abstract]
	Deformation Behavior of (Cu, Ag)-Sn Intermetallics by Nanoindentation	X. Deng, N. Chawla, K.K. Chawla, and M. Koopman	Acta Mater., vol. 52, 2004, pp. 4291-4303.	[view abstract]
	Thermomechanical Fatigue Behavior in Sn-Ag Solder Joints	T. S. Choi, K. N. Subramanian, J. P. Lucas	J. Electr. Mater., vol. 29, no. 10, 2000, pp. 1249-57.	[view abstract]
	Interfacial reactions and impact reliability of Sn-Zn solder joints on Cu or electroless Au/Ni(P) bond-pads	M. Date and K.N. Tu	J. Mater. Res., Vol. 19 (10), 2004, pp. 2887-2896.	[view abstract]
	Application of Asymmetrical Four Point Bend Shear Test to Solder Joints	O. Unal, I.E. Anderson, J.L. Harringa, R.L. Terpstra, B.A. Cook and J.C. Foley	J. Electron. Mater., Vol. 30, 2001, pp. 1206-1213.	[view abstract]
Mechanical Modeling	*Microstructure-Based Modeling of Deformation in Pb-free Solders*	N. Chawla and R.S. Sidhu	J. Mater. Sci. – Materials in Electronics, Special Issue on Pb-free Solders, 2007.	[view paper]
	Deformation Analysis of Lap Shear Testing of Solder Joints	Y.-L. Shen, N. Chawla, E.S. Ege, and X. Deng	Acta Mater., vol. 53, 2005, pp. 2633-2642.	[view abstract]