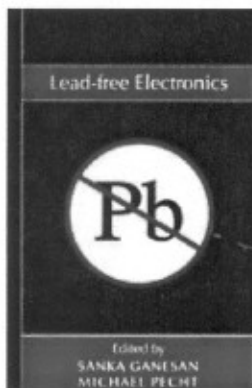
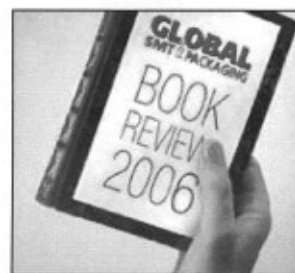


The latest lead-free soldering textbooks

Reviews by Bob Willis



Lead-Free Electronics - 2006 Edition

*Edited by Sanka Ganesan & Michael Pecht
Published by Wiley Interscience
Paperback with 15 Chapters,
760 pages with diagrams and
photographs.*

This book first came to my attention back in 2004 through a direct mailshot from CALCE. I have been on their circulation list for some time; this group is involved in a very diverse range of projects. This new edition is now a hardback with new chapters added.

The book contains chapters mainly written by staff at CALCE but with contributions by industry and one other University balancing theory with practical work. Chapters cover alloys, components, assembly and, of course, reliability. I thought the text on components was very useful, covering some of the failure modes and methods of test. I also like the section on lead plating and the problems associated with plating chemistry.

One chapter is part written by Jasbir Bath, whom I know from his days at ITRI in the UK, now Soldertech/Tin

Technology. Jasbir and his colleagues at Solectron provide an overview of the practical production issues of lead-free manufacturing, including their experiences. Jasbir covers each step in the process and tries to pick up the practical issues of controlling material and products in a demanding contract market with the different demands of customers all trying to come to grips with lead-free.

New chapters cover tin whiskers, joint reliability, legislation in different countries and impending changes to state law. A very useful new section penned by the CALCE team covers implementation guidelines for lead-free, which will be very useful to the surprising number of companies that still have taken no action.

I particularly enjoyed reading the chapter on the cost of lead-free introduction; a simple tick sheet for engineers would have been valuable as well. Most of the areas of cost were highlighted, with some exceptions. Like most engineers the author likes to see inside products so the final chapter on lead-free applications was interesting, looking at the product build just a like a strip-down investigation.

However, I felt with the number of products in the marketplace this should have been greatly expanded.

In 2004 I felt that all the key topics were well covered. Now in 2006, the price of the updated edition is still very reasonable when compared with other lead-free textbooks on the market.