

## Quarterly Newsletter

### In This Issue:

- Meet our new President/General Manager, Bob Froehlich
- Technology Spotlight: Copper Filled Micro Vias

Bob Froehlich joined the Cosmotronic operation at the beginning of 2009 as the new President and General Manager. Bob comes to Cosmotronic with a wealth of knowledge in the flexible circuit fabrication business.

Prior to joining Cosmotronic Bob had the role of Plant Manager of the 3M flexible circuit facility located in Canoga Park, Ca. The 3M facility is recognized as the world's premier fabricator of flexible circuits for the medical marketplace. Bob had the lead role and responsibilities for most of his 23 years at the facility. In addition to leading the facility as a provider of flexible circuits to the medical flex marketplace, Bob was also responsible for taking the facility

through ownership changes on four separate occasions, starting with Gould Electronics in 1987, followed by Acuson Corporation, Siemens USA, and most recently 3M Company.

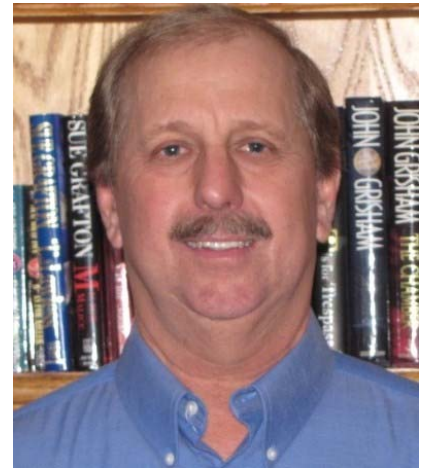
Bob also has experience in the fabrication of military related circuits as a Process Engineer and Project Manager for the old Hughes Aircraft facility located in Irvine Ca. Bob possesses an MBA in Financial Management and a BA in Industrial Technology from California State University, Long Beach.

Over the years Bob has developed an intimate knowledge in many of the industries most progressive management techniques and philosophies, including Total Quality

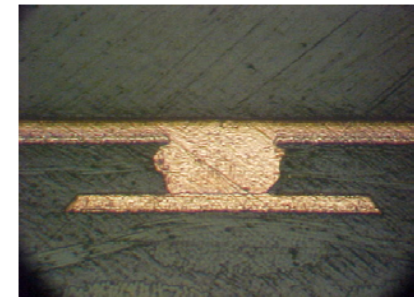
Management, Lean methodologies and is a certified Six Sigma Green Belt.

Bob very much looks forward to working with Cosmotronic's multiple customers and developing strong relationships with a focus on their unique needs. Bob's initial efforts have been in establishing a foundation that will lead Cosmotronic towards achieving their Vision of 'being the preferred supplier to our customer base, providing them with products and services that consistently exceed their expectations'.

Please feel free to contact Bob at your convenience to discuss any concerns you may have or to simply welcome him on-board.



Bob Froehlich



Copper Filled & Planarized Micro Via



Etched and Solder Coated

## Copper Filled Micro Vias Expand Our HDI Capabilities

The ability to copper fill micro vias is Cosmotronic's latest technology advancement. High Density Interconnect (HDI) designs that incorporate via-in-pad and/or stacked micro vias require that laser drilled micro vias be filled with a conductive material. By

plating these features closed with copper, signal delays are minimized and differences in coefficient of expansion normally associated with conductive epoxy fillers are eliminated. Utilizing chemistry developed by OMG Electrochemicals specifically for this applica-

tion, micro vias up to .007" in diameter and as deep as .0045" can be completely filled. The result of this process is a smooth surface that is free of indentations and is suitable for subsequent lamination or assembly processing.