

Courtney R. Furnival
P. O. Box 2641
28659 Brigadoon Court
Lake Arrowhead, CA 92352-2641

CRFurnival@SPSpower.com
Telephone: (909)336-6306
www.SPSpower.com

Professional Experience:

Semiconductor Packaging Solutions (October 1998 - Present)

Owner and Founder Name changed from A&H Technology, and returned to full time engineering, consulting and package/assembly business. Focus on high power module/IC package design with expanded laboratory for sample build, characterization, & failure analysis.

Power GaN & SiC Product designed, developed and evaluated 600V & 1200V numerous state-of-art packages for major companies under NDA. These were single & multichip, normally-on & cascaded, and laminate & Leadframe based leadless architecture.

Multichip Module design & sample build include EV IGBT Inverter(Ford), Generator Inverter(Ballard), Lasik 4KV P.S.(Intralase), Plasma TV PFC PS(GPT), LGA DC/DC Converters w Embedded Magnetics(AAI), BGA Drives w Embedded Magnetics(IXYS).

Custom & Multichip semiconductor DFN, QFN, BGA & LGA packages, and standard & special PDIP, SOIC, SOT & Flip-Chip IC. (AAI, Microsemi, IXYS, Semtech, Diode Inc, IR, Lumileds, Teledyne, Unitrode, Wuxi and more)

Thermal & HV IMS material development & testing support for Laird-Thermagon with thermal modeling & simulation, testing & characterization, life testing, and provided DC/DC, LED Lighting and Motor Drive application support & market analysis.

Off-Shore Technical Liaison with numerous contract assembler & fabricators in Asia for custom packages, modules, PCBs and new technologies.

International Rectifier Corp (Dec 1989 - October 1998)

Director of Engineering Responsible for developing packages for a line of Motor Control Products(1-15HP), and for on-going product engineering. Products functions included inverters(IGBT), rectifier, protection and drivers. This included significant customer & application interface, patents and establishing finite-element-analysis capabilities.

Director of Engineering, Advanced Products Responsible for the design of High Power IGBT module packages and products(25-1000A), including development of assembly processes and equipment, and transfer of manufacturing to plants in Italy, China and Mexico. These products included patents, and introduction of IMS and AIN DBC technology to IR. Also brought thermal & mechanical FEA modeling to IR.

Director of Engineering, Microelectronics Relays Responsible for engineering of this group, and for the development of many opto-isolated relay packages and high voltage power IC packages.

A&H Technology (April 1985 - September 1998)

Owner and Founder Responsible for establishing a semiconductor package engineering and consulting firm, providing new package and process development to the semiconductor and hybrid module industries, specializing in power IC products. Representation of Sub-contract assemblers in Southeast Asia, to U.S. and Canadian companies, has been an integral part of this business, and the facilities to develop and build new packages and products. (Part-time 1990-1998)

Silicon General Semiconductors (November 1978 - April 1985)

World Wide Assembly Operation Manager Responsible for assembly operations in Garden Grove(S-Level) and Puerto Rico(MIL-STD883), and sub-contract assembly(Commercial) in the Philippines and Korea. Responsibilities include P&L for all assembly, package/process engineering, and corporate purchasing.

Hybrid Plant Manager Responsible for establishing a Power Hybrid Group including facilities, equipment & products, and operation of group with P&L responsibility at record profit margins.

RCA Government & Commercial Systems (Aug 1976 - Nov 1978)

Manufacturing Engineering Manager Responsible for manufacturing engineering and support, and new product, package and process development of the RCA Portable Radio Group with state-of-the-art high density RF hybrids and PCB technologies.

TRW Semiconductors (Sept 1973 - August 1976)

Thick-Film Hybrid Project Manager Responsible for establishing and operating a thick-film hybrid group that supported the RF and Power Product departments. Developed & manufactured new thick-film hybrid products, BeO metalization, copper TF ink, and die/wafer solder contacts.

Composite Microcircuits (June 1971 - July 1973)

Chief Engineer Responsible for new product development, manufacturing engineering and electrical design of this RF and Telecom hybrid company. Converted Sylvania R&D technology into commercial thick-film hybrid products for Northern Electric, Bell&Howell.

Sylvania Microelectronics (April 1968 - Dec 1971)

Title: R&D Engineer Responsible for the development of thick-film materials and hybrid assembly processes, and for military TF multilayer reliability evaluation. Developed unique thick-film glass, conductors, capacitor dielectrics and processes. Developed TF multilayer boards studies funded by RADC and Fort Monmouth.

Education:

Geneva College Beaver Falls, PA B.S. Major Physics and Minors Chemistry & Mathematics

University of Wyoming Laramie, WY Graduate Studies in Physics

University of Massachusetts Boston, MA Graduate Studies in Physics (part-time)

Boston College Boston, MA Graduate Studies in Physics (part-time)

California State University Long Beach, CA Graduate Studies in Physics (part-time)

Awards:

Physics Achievement Award, Geneva College
Departmental PhD Traineeship, University of Wyoming

Patents:

Numerous patents for motor control & power IGBT modules, and packages, materials, processes & manufacturing techniques, and PCB patents with embedded magnetics, and near chip-scale GaN & SiC power packages.