

BIOGRAPHY



Mark Ellis

Sr. Master Lean Design® and Battery Consultant

Mark Ellis is a versatile and seasoned Operations and Engineering Manager with over 30 years of executive leadership experience. Mark has expertise in international negotiation, supplier consolidation, automation and machine tool systems, and cost reduction practices. Recognized for lead-time reductions, cost savings, and improvements in manufacturing efficiencies, Mark Ellis offers Munro & Associates' clients extensive expertise in manufacturing, process development and operations management.

Prior to joining Munro & Associates, Mark held a position as an independent consultant providing services in the area of battery and battery pack production, equipment, process development, and manufacturing cost models. Mark has been involved in developing manufacturing cost models for two different HEV systems from the battery to the final battery pack configuration.

He has provided Trade Show consultation, and has been involved with facility and manufacturing process evaluations for a NiCad battery manufacturer and Machine Tool shop processing wind generator components.

At Munro Mark lead several projects both locally and abroad. He was instrumental in the development of the GM Bolt, BMW i3 and BMW 328i cost models, and the Lead on the BJ40 and C-Max battery pack cost studies. He also worked on several torque convertors and clutch assemblies for a major Tier 1 automotive supplier. While in China, Mark delivered lean design and technology workshops to Chinese clients including Midea, WAW Truck Team and ABB MV-Drive.

Companies that have benefitted from Mark's knowledge and expertise are:

GREAT WESTERN TECHNOLOGIES, INC., is a wholly owned subsidiary of Great Western Minerals Group Ltd. (GWMG) specializing in mining exploration focused on developing strategic and unique minerals, especially rare earth elements (REEs). The company processes specialty metal alloys and powder products, including materials that utilize rare earth elements (REEs). As President and CEO, Mark managed all operations of the organization. Developed the company into a player in the specialty alloy and milled metal powder industry for the Aerospace, Hydrogen storage, battery manufacturing, and magnet industries. Mark lead the acquisition of Less Common Metals which

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was a company located in the UK doing similar work as GW Tech. This allowed for a doubling of production capabilities, and a global reach to the customers of specialty alloys.

COBASYS, is a company that provides advanced energy storage systems and solutions for the transportation and stationary markets. Mark was a design leader in developing the processes, products, systems, and application solutions for Cobasys' main customer base in the EV and HEV markets. Mark's position was Group Manager, Sr. Process Engineer for the implementation of new and automated manufacturing processes and introduction of new equipment for the fabrication of NiMH battery cells, packs, and modules.

OVONIC BATTERY CO., is the original developer of NiMH batteries for the transportation, stationary, telecommunications and other prismatic battery applications. Cobasys is a spin-off of Ovonic Battery. Mark Program Managed the plant design, operations, and installation of all production equipment, product and manufacturing engineering for the development of mass-produced NiMD cells, modules, and packs. This involved a manufacturing plant in Inner Mongolia, China where Mark co-managed the building of a negative electrode alloy processing plant. This was a green field turnkey project for the production of NiMH batteries and battery pack assembly systems. His efforts saved \$12.9M of the \$35M budget through efficiencies in equipment purchase and installation, staff training, start-up, and implementation of the plant ISO 2000 quality system.

RD SYSTEMS, is an automation technology company utilizing innovative mechanical designs, custom machining, and control system integration. As Executive Vice President Mark managed the international sales and engineering departments and helped build the infrastructure of the organization including project management, software development, and customer service. RD provided customized manufacturing systems internationally to Asia, Europe, Middle East and North America. Working in Asia 19 production plants were established and the production plans, equipment and staffing requirements were implemented at Marks direction.

Mark also assisted several other battery customers including: Duracell, Energizer, Ray-O-Vac, Johnson Controls, Boulder Battery, Saft, Varta, Tadiran, Electric Fuel, Moli Battery, Alexander Battery, Samsung, LG, five companies in Taiwan, and seventeen others in China.

Mark attended Rockford College and was a member of the American Management Association, Leadership degree program, as well as, the University of Wisconsin for Business Administration and Mechanical Engineering. He also received extensive professional training in Failure Mode & Effects Analysis (FMEA), Lean Manufacturing Practices and Taguchi Design of Experiments.

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Mark has been a member of the Board of Directors for Great Western Minerals Group and RD Systems. He has had several papers published in the Batteries International, and presented papers at several international battery conferences including the China International Battery Conference.

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