Louis Hruska

3330 Adelaida Road Paso Robles CA 93446

louishruska@gmail.com (805) 729-6755

Tech Executive with comprehensive background in general management, manufacturing, product development, and R&D. CEO/Sr. Executive with demonstrated record of success in business development, P&L management, conceptualizing new products and leading development teams, establishing advanced manufacturing facilities, and applying fundamental new technologies for performance enhancement and cost reduction.

Areas of expertise include:

- Product Development & Commercialization
- Expert Witness Testimony & Deposition
- Technical Sales & Marketing
- Process Development & Manufacturing Engineering
- Global Alliances
- IP Strategy, Licensing, & Defense

PROFESSIONAL EXPERIENCE

Energy Research Group **2008-Present**

Principal

Established consulting practice focusing on strategic planning, acquisition assessment, electronic manufacturing, application engineering, and battery design. Representative engagements have included:

- Led urgent process to find and eliminate failures in high volume GFCI devices at a $1B electronic product manufacturer. Established link between failures and microprocessor, developing data to force $10M settlement from semiconductor provider.

- Assessed technology, staff and market position of a small Lithium Ion battery maker for potential acquisition by a global leader in stationary and automotive battery systems. Served as GM of the acquired organization for 18 months, establishing manufacturing processes, transferring product design skills, and increasing product sales tenfold.

- Provided expert witness reports and testimony in billion-dollar patent infringement cases involving LiIon battery control and communication.

    - Expert for Apple represented by Fish & Richardson vs. Ericsson
    - Expert for Apple represented by Fish & Richardson vs. Qualcomm
    - Expert for LG represented by Fish & Richardson vs. SKI
    - Expert for Apple represented by Erise IP vs. Hitachi Maxell

- Conducted a product and application analysis for a midsized battery company with consumer, military, and automotive businesses. Recommended a focus on automotive/military applications and eliminating consumer products to improve margins and avoid additional investment.

Akermin, Inc. **2007-2008**

President and CEO

Organized, staffed, and developed new business strategy for an innovative technology company with fuel cell applications. Recruited and trained a senior staff with industry expertise. Established a culture of cooperation and open communication and expanded technical foundation. Attracted new funding and closed on $3M of venture and $1M military funding within 6 months.

Microchip Inc **2002-2006**
PowerSmart Systems Division Director
Responsible for establishing product development, sales, marketing, and manufacturing of a new product line within a growing semiconductor company. Achieved operational breakeven within one year. Participated in corporate technology review and assessment, including smart sensor development, MEMs applications, and semiconductor packaging techniques.

- Identified market opportunity and created business plan to expand Microchip product offering into vehicle and military markets.

- Succeeded with automotive product qualification in a Japanese Tier 1/US OEM environment.

PowerSmart Inc. **1998 – 2002**
Chief Technical Officer and General Manager, PowerSmart Systems

Founding partner and lead technical executive of electronics start-up. Responsible for overall product strategy, manufacturing partnerships, development of engineering organization. Key member of corporate management team, with specific responsibility for building and managing integrated systems business. Played a key role in attracting potential acquirers and completing transaction with Microchip.

- Conceptualized the business based on mutually beneficial spin out of technology from Duracell, played key role in obtaining $12MM initial funding. Built high performing engineering team with mechanical, electrical, and chemical engineering capabilities. Revived key relationships with device OEMs.

- Secured development contracts from major auto companies and the U.S. Army for innovative vehicle battery management systems. Created and led project consortium, which included global leaders in the trucking industry, to fulfill contract deliverables.

- Managed a multi-national alliance for world class mixed signal ASIC design and manufacturing, essential to long term product strategy and business proposition.

- Established product development efforts in automotive sensors, magnetic field measurement, and MEMs sensor integration.

Duracell North American Group, a Division of the Gillette Company 1986 - 1997
Duracell Worldwide Technology Center, Needham MA

Director, Rechargeable Battery Engineering 1995 - 1997

Reported to Chief Technology Officer. Managed staff of 75 in two locations through 5 direct reports. Groups consisted of Product R&D, Mechanical Product Design, Process Engineering, Electronic Product Design and Manufacturing/Engineering.

- Increased the rate of product introduction tenfold, achieving aggressive product cost goals while introducing innovative manufacturing processes and control methods.

- Developed and championed an innovative battery design that provided 50 % more energy at 30% lower cost.

Director, Rechargeable Battery Engineering (Continued)

- Rescued failed product development and supply alliance through immediate identification and management of virtual organization for industrial design.
- Stretched product design team to develop multiple approaches for new battery to satisfy need of major telecom OEM for minimized cost and size, while meeting Duracell's cosmetic and durability requirements for retail.

Manager, Product Development 1992-1995

Reported to VP, Product Development. Led staff of 20 through 4 direct reports for design and manufacturing engineering of product line supporting Duracell's entry into rechargeable batteries.

- Provided technical leadership to develop product and secure adoption of first standard-sized PC battery by a major global PC OEM. Cumulative unit volume approached 500K, with revenues of nearly $25M. Won Division sales recognition award for this achievement.
- Established new technology expertise within Duracell, i.e., chip design and ASIC development, to provide major value-added feature and source of competitive advantage for entire PC battery line. Led to $40 M business within 3 years.
- Led complex technology alliance for electrical interconnect system with global leader in connector technology from concept to fruition, resulting in widely accepted standard offering major advances in thermal management, data communications, and size minimization.

Manager, Manufacturing Engineering 1989 - 1991

Led a diverse engineering project team tasked with dramatically reducing manufacturing cost, improving product quality and increasing production capacity of a purchased facility in Switzerland. Manufacturing technology included high vacuum sputtering, continuous electroplating, high temperature annealing, and polymer processing.

Hired and relocated skilled team of engineering professionals, equipment designers, and quality system experts.

- Supported international marketing and sales efforts with product application testing and concepts.
- Managed plant operations, including quality, production, development, manufacturing engineering.

Project Manager, Advanced Product Development 1988 -1989

Identified the opportunity for a major design improvement in Duracell's core product and proved its manufacturability in the Mexican plant, an effective demonstration site. This innovation was chosen for implementation as a global best design feature for Duracell's total production.

Manager, Process Development 1986 - 1988

Directed a 30-person team to design, specify, and install a $10M manufacturing process for a high-power Lithium battery.

- Introduced new fundamental technologies resulting in major changes in product and process design, enabling proprietary positions in battery design and manufacturing process.
- Met all cost targets, with a payback of less than 10 months despite high risk associated with basic battery chemistry, unproven manufacturing technologies, and magnitude of scale-up.

ELTECH Systems Corporation, Chardon, OH **1981-1985**

R&D Supervisor

Built staff of 10 to engage in ceramic materials and chemical process technology for spin-out.

- Invented proprietary process to improve heat transfer coefficient of titanium seawater heat exchangers, resulting in license income of $1M per year.
- Devised basic process and materials improvements that resulted in $5M annual reduction in power consumption for chemicals manufacturer.
- Developed Industrial Research Institute award-winning zirconia-based asbestos replacement material.

Diamond Shamrock Corporation, Painesville, OH **1976-1981**

Research Engineer

Performed fundamental electro-chemical research directed towards advance battery systems.

EDUCATION

The University of Michigan, Ann Arbor Michigan

- MS, College of Engineering 1976. Chemical and Materials Engineering
- BS, College of Engineering, 1974. Major in Chemical Engineering, Minor in Mechanical Engineering Magna cum Laude; achieved 4.0 GPA in Ch. Engineering coursework.

PATENTS & PUBLICATIONS

- Over 20 patents issued worldwide, covering materials, manufacturing processes, and product designs.
- Contributed to international conferences, authored numerous publications and presentations on product design and market development topics.
- Hruska, L.W., & Savinell, R., “Experimental-Study of an Iron-Redox Battery,” 127 J. Electrochemical Society C356, 1980
- L. W. Hruska and R. F. Savinell, “Investigation of Factors Affecting Performance of the Iron-Redox Battery”, J. Electrochem. Soc. 128, 1981
- H. Taylor and L. W. Hruska, "Standard smart batteries for consumer applications," Proceedings of the Tenth Annual Battery Conference on Applications and Advances, 1995
- L. W. Hruska, "Smart batteries and lithium ion voltage profiles," The Twelfth Annual Battery Conference on Applications and Advances, 1997
- M.P Hull, L.W. Hruska, et al., “Smart Battery Algorithm For Reporting Battery Parameters To An External Device” 70 J. Power Sources 150, 1998
- D. Van Phuoc, L.W. Hruska, et al., “Battery Pack Having a Processor Controlled Battery Operating System,” 70 J. Power Sources 295, 1998

PRIOR LITIGATION CONSULTING: RETAINED AND/OR TESTIFIED AT A DEPOSITION OR TRIAL

- *Apple Inc. v. Maxell, Ltd.* (IPR2020-00199) (PTAB)
- *Maxell Ltd. v. Apple Inc.* (5:19-CV-00036) (EDTX)
- *LG v. SKI* (337-TA-1179) (ITC)
- *Qualcomm Incorporated v. Apple Inc.* (Inv. 337-TA-1065) (ITC)
- *Apple Inc. v. Telefonaktiebolaget LM Ericsson* (IPR2015-01919) (PTAB)
- *Maxim Integrated Products, Inc. v. Silicon Mitus Technology* (5:17-cv-3507) (NDCA)
- *Qualcomm Incorporated v. Apple Incorporated* (3:17-cv-02402) (SDCA)
- *Ericsson v. Apple* (Inv. 337-TA-952) (ITC)
- *Ericsson v. Apple* (Inv. 337-TA-953) (ITC)
- *Ericsson v. Apple* (2:15-cv-00293) (EDTX)
- *Unova Inc. v. Hewlett-Packard* (2:02-cv-03772) (CDCA)
- *Unova Inc. v. Dell* (00-cv-1354) (CDCA)