Philip Lessner

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Summary

Experienced technology leader with expertise in electronic components, materials development, and global R&D management. Extensive experience in capacitors, electrochemistry, conductive materials, and dielectrics.

Education

University of California, Berkeley

1986 PhD, Chemical Engineering

Cooper Union

1980 BE, Chemical Engineering

Experience

YAGEO Group

2023–2024 Executive Vice President and Chief Technology Officer

- Directed technical strategy across capacitors, resistors, inductors, and sensors.
- Coordinated product roadmaps with teams and major OEM customers.
- Evaluated and integrated acquisitions to enhance product development and cost efficiency.
- Managed corporate chemical, microscopy, and electrical testing labs.

KEMET Electronics

2006–2023 Senior Vice President, Chief Technology Officer and Chief Scientist

- Oversaw technical direction of all product lines at KEMET including capacitors, magnetic, sensor, and actuator products.
- Technical due diligence and integration of R&D for the acquisition of TOKIN from NEC.
- Due diligence for the acquisition of Niotan, a tantalum powder manufacturer, including advising the KEMET Board of Directors on litigation pending at the time of acquisition.
- Working with the product line R&D leaders and business leaders on the R&D section on the 3 year strategic planning.
- Leading patent activities including filing decisions and annuities renewal decisions.
- Enhancing analytical capabilities and electrical testing capabilities worldwide.
- Lead efforts to identify and execute on University partnerships (consortium and sponsored research projects).

2004–2006 Vice President, Tantalum Capacitor Technology

- Responsible for leading the technical due diligence for the acquisition of the EPCOS Tantalum Product line
- My team was a key part of the successful transfer of the Tantalum-Polymer (KO-CAP®) product line from the USA to China

2003–2004 Director, Technical Marketing

- Work with business groups to determine which products to develop.
- Helped develop business case methodology (still in use today).
- Visited global customers: especially the expanding Asian customer base to determine trends and direction.

2002–2004 Director, Tantalum Capacitor Technology

- Lead the team that developed new products and materials for Tantalum and Aluminum Polymer and Tantalum-MnO_2 product lines
- Technical lead on the alliance with NEC-TOKIN (Tantalum-Polymer) and Showa Denko (Aluminum-Polymer)
- Helped establish alliance with major manufacturer of medical devices on high voltage Tantalum capacitors for defibrillators

2001–2002 Senior Technical Expert, Tantalum Capacitor Technology

1996–2001 Technical Expert, Tantalum Capacitor Technology

I was responsible for developing the Tantalum-Polymer product line and was the technical lead on the team on the partnership between NEC Energy Devices Division and KEMET on this technology.

Parker Chomerics

1993–1996 Manager Materials and Testing

1990–1993 Senior Scientist

Giner, Inc.

1987–1990 Senior Scientist

Selected Publications and Patents

Y. Freeman and P. Lessner, Evolution of Polymer Tantalum Capacitors , Appl. Sci. 11(12), 5514 (2021).

P. Lessner, KEMET–100 Years of Continued Innovation , IEEE Power Electronics Magazine Vol. 6 Issue 2 (June 2019)

A.P. Chacko, Y. Jin Y. Shi, A. Bunha, J. Chen, P. Lessner, Advances in Reliability of Conducting Polymers and Conducting Polymer Based Capacitors in High Humidity Environment , ECS Transactions, Vol. 85, No. 13, p. 115 (2018)

Y.Jin, J. Chen, P. Lessner, Thermal Stability Investigation of PEDOT Films from Chemical Oxidation and Prepolymerized Dispersion , Electrochemistry (2013)

X. Xu, A. Gurav, P. Lessner, C.A. Randall, Robust BME Class-I MLCCs for Harsh-Environment Applications , IEEE Transactions on Industrial Electronics Vol. 58, Isssue 7 (July 2011)

Y.Freeman, P.Lessner, A.J.Kramer, E.C.Dickey, J.Koenitzer, L.Mann, Q. Chen, T.Kinard, J.Qazi, Low Voltage Specific Charge (CV/g) Loss in Ta Capacitors , J. Electrochem. Soc., Vol.157 Issue 7 (2010)

Y. Freeman, W.R. Harrell, I. Luzinov, B. Holman, P. Lessner, Electrical characterization of tantalum capacitors with poly (3, 4-ethylenedioxythiophene) counter electrodes , J. Electrochem. Soc. Vol. 156, p.G65 (2009).

B. Melody, T. Kinard, P. Lessner, The Non-Thickness-Limited Growth of Anodic Oxide Films on Valve Metals , Electrochem. Solid-State Lett. Vol. 1, p.126 (1998).

P. Lessner, F.R.McLarnon, J. Winnick, E.J.Cairns, The Dependence of Aqueous Sulfur-Polysulfide Redox Potential on Electrolyte Composition and Temperature , J. Electrochem. Soc., Vol. 140, p. 1847 (1993).

P. Lessner, F.R.McLarnon, J. Winnick, E.J.Cairns, Kinetics of Aqueous Polysulfide Solutions Part III . Investigation of Homogeneous and Electrode Kinetics by the Rotating Disk Method , J. Electrochem. Soc., Vol. 134, No. 11, p. 2669 (1987).

P. Lessner, F.R.McLarnon, J. Winnick, E.J.Cairns, Kinetics of Aqueous Polysulfide Solutions: II . Electrochemical Measurement of the Rates of Coupled Electrochemical and Chemical Reactions by the Potential Step Method , J. Electrochem. Soc., Vol. 133, No. 12, p. 2517 (1986).

P. Lessner, F.R.McLarnon, J. Winnick, E.J.Cairns, Kinetics of Aqueous Polysulfide Solut ions I . Theory of Coupled Electrochemical and Chemical Reactions, Response to a Potential Step , J. Electrochem. Soc., Vol. 133, No. 12, p. 2510 (1986).

P.Lessner, J. Newman, Hydrodynamics and Mass Transfer in a Porous-Wall Channel , J. Electrochem. Soc., Vol. 131, No. 8, p. 1828 (1984).

V. Andoralov, M. Evaristo, R. Monteiro, P. Lessner, Aluminum polymer capacitor with enhanced internal conductance and breakdown voltage capability US11398357B2.

A. Bunha, A. Chacko, Y. Shi, Q. Chen, P. Lessner, Formulation for use with conducting polymers in solid electrolytic capacitors US11396594B2.

A. Templeton, J. Bultitude, L. Jones, P. Lessner, Gate drive interposer with integrated passives for wide band gap semiconductor devices US11037871B2.

J.Bultitude, P. Lessner, A. Gurav, Multilayered ceramic capacitor structures for use at high power US10840023B2.

R. Hill, P. Lessner, R. Phillips, K. Brown, J. Byrd, Multilayered ceramic capacitor with improved lead frame attachment US9799449B2.

J. McConnell, J. Bultitude, R. Phillips, R. Hill, G. Renner, P. Lessner, A. Chacko, J. Bell, K. Brown, Electronic component termination and assembly by means of transient liquid phase sintering and polymer solder pastes US8902565B2.

J. Prymak, C. Stolarski, D. Jacobs, C. Wayne, P. Lessner, J. Kinard, A. Melody, G. Dunn, R. Croswell, R. Chelini, Thin solid electrolytic capacitor embeddable in a substrate US7745281B2.

P. Lessner, B. Melody, J. Kinard, E. Reed, A. Harrington, D. Persico, D. Wheeler, Surface mount aluminum capacitor having anode foil anodized in an aqueous phosphate solution US6808615B2.

P. Lessner, R. Hahn, B. Melody, E. Reed, J. Kinard, Aging process for solid electrode capacitor US6334945B1.

P. Lessner, T. Su, R. Hahn, V. Rajasekeran, Preparation of conductive polymers from stabilized precursor solutions US6056899.