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Conroe, TX 77385

LABAN M. MARSH, P.E., CFEI
SENIOR CONSULTANT

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Mr. Marsh is a Senior Staff Consultant with Engineering Systems Inc. (ESi) in Houston, Texas. He obtained a Bachelor's degree in Electrical Engineering from the University of Houston. For ESi, Mr. Marsh performs electrical investigations of fires, explosions, arc flashes, lightning, electrostatic events, power and electronic equipment failures, and other electrical issues. Mr. Marsh is an experienced investigator of lithium-ion battery fires and explosions and has validated claims through experimentation and failure reconstruction. Mr. Marsh does control process failure analysis. Prior to joining ESi, he acquired 33 years of experience in electrical and software product design in the oilfield services industry, primarily for MWD/LWD operations. Mr. Marsh has a strong background in design of control systems and data acquisition systems for low power, high temperature, and hazardous environments. He has an engineering history of challenging system assumptions, promoting continuous product improvement and performing root-cause failure analysis to provide mission critical solutions. Mr. Marsh holds 21 patents related to the oilfield services industry.

Areas of Specialization

Root Cause Failure Analysis
Fire and Explosion Investigation
Electrical Fire Investigation
Battery Operation and Failure Investigation
Control Process Analysis
Switchgear, Arc Flash, and Lightning Strike Investigation
MWD and LWD Operations
Rapid and Agile Software Development Methods
Telemetry Systems, Data Acquisition, Digital Signal Processing
Data Compression and Transmission/Reception Design
Mechanical Failure Analysis
Electrical Failure Analysis
Electrical Engineering Design
Computer/Microcontroller Engineering Design

Education

B.S., Electrical Engineering, University of Houston

Licensed Professional Engineer (P.E.)

State of Texas License No. 129009

January 2024

Court Qualifications

Expert Witness: Electrical Engineering

Certifications

NAFI Certified Fire and Explosion Investigator (CFEI)

Professional Affiliations

National Association of Fire Investigators (NAFI)

Member

Institute of Electrical and Electronics Engineers (IEEE)

Member

International Association of Direction Drillers (IADD)

Member

Society of Petroleum Engineers (SPE)

Member

International Association of Arson Investigators (IAAI)

Member

Positions Held

Engineering Systems Inc., Houston, Texas

Senior Consultant, 2023 – Present
Senior Staff Consultant, 2018 – 2023
Staff Consultant, 2015 – 2018

Halliburton, Houston, Texas

Telemetry Advisor (Electrical), 2013 – 2015
Senior Project Manager, 2009 – 2013

Dresser Industries/Halliburton, Houston, Texas

Software Development Manager, 1996 – 2009

Baroid Corporation/Dresser Industries, Houston, Texas

Electrical/Software Team Leader, 1986 – 1995

NL Industries, Houston, Texas

Signal Processing and Electrical Developer, 1981 – 1986

Ross Hill Controls, Houston, Texas

Electrical Engineering Intern

Patents

US Patent #5,417,295, “Method and system for the early detection of the jamming of a core sampling device.” Vikram Rao, Bobby Wilson, and Laban Marsh, issued 5/23/1995.

US Patent #6,788,219, “Structure and method for pulse telemetry.” Cili Sun, Laban Marsh, and Bipin Pillai, issued 9/4/2004.

US Patent #6,963,290, “Data recovery for pulse telemetry using pulse position modulation.” Laban Marsh, Cili Sun, Bipin Pillai, and Leonardo Vianna, issued on 11/8/2005.

US Patent #7,068,182, “Method and apparatus for mud pulse telemetry.” Christopher Golla, Laban Marsh, Paul Rodney, Cili Sun, Bipin Pillai, and Paul Beene, issued on 6/27/2006.

US Patent #7,106,210, “Method and apparatus for mud pulse telemetry.” Christopher Golla, Laban Marsh, Paul Rodney, Cili Sun, Bipin Pillai, and Paul Beene, issued on 6/12/2006.

US Patent #7,167,101, “Method and apparatus for telemetry.” Christopher Golla, Laban Marsh, Paul Rodney, Cili Sun, Bipin Pillai, and PaulBeene, issued on 1/23/2007.

US Patent #7,216,533, “Methods for using a formation tester.” Doug McGregor, Gregory Gilbert, Mark Proett, James Fogal, David Welshans, Glenn Gray, Svetosar Simeonov, Laban Marsh, Jean Michael Beique, and James Stone, issued on 5/15/2007.

US Patent #7,394,064, “Measuring the weight on a drill bit during drilling operations using coherent energy.” Laban Marsh, issued on 7/1/2008.

US Patent #7,444,362, “Method and system for sending a reduced representation of logging data to a log analysis application.” Laban Marsh, Robert Schave, and Alp Kozak, issued on 10/28/2008.

US Patent #7,480,207, “Filtering and detection of telemetry.” Laban Marsh, issued on 1/20/2009.

US Patent #7,628,227, “Measuring the weight on a drill bit during drilling operations using coherent energy.” Laban Marsh, issued on 12/8/2009.

US Patent #7,777,643, “Optical communications with a bottom hole assembly.” Cili Sun, Laban Marsh, Billy Bankston, and Jay Martin, issued on 9/17/2010.

US Patent #7,966,875, “Methods and apparatus for measuring formation properties.” Mark Proett, James Fogal, James Dudley, Laban Marsh, David Welshans, Jean Michael Beique, John Hardin, William Hendricks, Gregory Gilbert, Mark Sitka, and James Stone, issued on 6/28/2011.

US Patent #8,880,349, “Mud pulse telemetry.” Bipin Pillai, Laban Marsh, James Dudley, and Ronald Spross, issued on 11/4/2014.

US Patent #9,068,442, “Determining the order of devices in a downhole string.” Christopher Golla and Laban Marsh, issued on 6/30/2015.

US Patent #9,417,353, “Remote processing of well tool sensor data and correction of sensor data on data acquisition system.” Laban Marsh, Stuart Sargeant, and Barry McKay, issued on 08/16/2016.

US Patent #9,638,033, “Mud pulse telemetry.” Bipin Pillai, Laban Marsh, James Dudley, and Ronald Spross, issued on 05/02/2017.

US Patent #9,785,675, “System and method for classifying and storing well data.” Laban Marsh and Wilbert Chenevert, issued on 10/10/17.

US Patent #10,465,504, “Sensor data compression for downhole telemetry applications.” Chris Gao, Laban Marsh, and Paul Rodney, issued on 11/05/19.

US Patent #10,472,956, “Mud pulse telemetry.” Bipin Pillai, Laban Marsh, James Dudley, and Ronald Spross, issued on 11/12/19.

Presentations

“Lithium-Ion Battery Safety,” presented to the Fire Risk Management Class at OSU, April 2020, April 2021, and November 2021.

“Hidden Electrical and Battery Hazards in Commercial Claims,” presented at ESi/Houston Claims Association CE & CLE Educational Afternoon, November 2019