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NARESH J. KAR, PH.D., P.E., FASM, FACFE
SENIOR MANAGING CONSULTANT

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Dr. Kar is a Senior Managing Consultant and metallurgical engineer at Engineering Systems Inc. (ESi) in the Materials Practice and is a licensed Professional Engineer in the state of California. He is experienced in metallurgical/corrosion/wear/mechanical failures, fracture and fatigue, patent infringement, surface techniques, and product development. Dr. Kar's legal experience is in the areas of automotive component failures, metal and plastic plumbing/piping failures, tire failures, medical device failures, chairs, industrial hardware failures, construction defects, bicycle accidents, paint analysis, gas and propane explosions, and food contamination issues. He has provided testimony in matters pending before both state and federal courts with over 200 depositions, 40 trials, and jury verdicts.

Areas of Specialization

Product failures, product liability, product development Patent infringement testing

Metallurgical/corrosion/wear/mechanical failures, fracture and fatigue, surface techniques, corrosion, wear of materials

Automotive component failures, metal and plastic plumbing/piping failures, medical device failures, chairs, industrial hardware failures

Paint and stucco failures/construction defect claims, food contamination

Education

Ph.D., Materials Science & Engineering, Mechanical Engineering (Minor), Business Administration (Minor), University of California, Berkeley, 1979

M.S., Materials Science and Engineering, University of California, Berkeley, 1976 B.S., Metallurgical Engineering, Indian Institute of Technology, 1974

Licensed Professional Engineer (P.E.)

State of California..... License No. MtE1738

Professional Affiliations/Honors

Fellow-ASM International (American Society for Materials International)

Fellow, American College of Forensics Examiners

Positions Held

Engineering Systems Inc., Anaheim, CA
Senior Managing Consultant, 2022 - Present
Kars' Advanced Materials, Inc., Anaheim, CA
Vice President and Principal, 1988 – 2022
Smith International, Irvine, CA
Manager, Advanced Materials Engineering, 1982-1989
Anamet Laboratories, Berkeley, CA
Senior Metallurgist, 1979 – 1982
University of California Berkeley & AMMRC Dept of the Army, Watertown, MA
Post-Doctoral Research Fellow, 1978 – 1979
Lawrence Berkeley Labs, Berkeley, CA
Research Scientist, 1974 – 1978
Independent Materials Consultant / Expert Witness, 1982 - Current

Honors & Awards

Elected Fellow of ASM International, 1989 (Formerly American Society for Metals) One of 51 people worldwide bestowed this honor in 1989.
Fellowship, Regents of the University of California, 1975-76
Granted 11 U.S. Patents to date, 6 others pending,
Winner, 1989 Special Meritorious Award for Engineering Innovation, Petroleum Engineer International, SPE.
Board Certified Diplomate & Fellow, American College of Forensics Examiners

Professional Activities

Chairman, American Society for Metals (ASM International) Orange County Chapter, 1988-89. Previously Vice-Chairman, Secretary and Executive Committee Member, 1982 to 1988
Exec. Member, West Coast Liaison Committee, ASM International, Metals Park Ohio, 1983 - 1987
Organized and taught industrial courses on Metallurgy, Heat treating and Non-Ferrous materials, plastics, rubbers through ASM S. California Chapters
Technical Chairman, Westec 1988 (ASM International)
Organized major technical conference with over 20 technical sessions. Laser Processing of Materials, 1989, 1990, 1991, 1993
Taught major courses for ASM International to automotive/aerospace engineers. Also presented seminars in Europe and India.
Failure Analysis of Aerospace Materials, 1991 Introduction to Failure Analysis, 1992 Taught educational courses on failure analysis for ASM International to automotive and aerospace engineers and scientists.
Adjunct Faculty Instructor, Metals Engineering Institute, Ohio. Forensic Failure Analysis in Support of Product Liability Claims

Presentations

Technical presentation - National. Assoc of Subro Professionals S. Cal, June 2008
Over 3000 proprietary technical reports

"Interrelationships between thermal history and mechanical properties of a secondary hardening steel", Lawrence Berkeley Labs., U.S. Department of Energy publication LBL- 5449, Dec. 1976.

"Investigation of Isothermal Transformations in Secondary Hardening Steels", presented at the TMS-AIME Fall meeting, Chicago, Illinois, Oct. 1977.

"Mechanical Properties of AISI 4340, 4350 steels modified with aluminum and silicon", presented at the ASM/AIME Annual meeting, Denver, Colorado, Feb.1978.

"Investigation of the role of microstructure on the abrasive wear and mechanical properties of secondary hardening steels", presented at the AIME Annual meeting, New Orleans, Feb. 1979.

"Design of Wear-resistant steels", presented at the ASM/AIME Winter meeting, Las Vegas, Feb. 1980

"The role of microstructures on the mechanical properties and two-body abrasive wear resistance of steels", PhD. thesis, University of California, Berkeley, June 1979.

"Modified 43XX steels for high toughness", publication AMMRC 80-20, Army Materials & Mechanics Research Center, Watertown, Mass., April 1981.

"Abrasive Wear of High Strength Steels", published in ASM symposium "Wear and Fracture Prevention", American Society for Metals, 1981.

"Investigation of the role of microstructures on the two-body abrasive wear resistance of steels", published in the proceedings of the "Third International Conference on Wear of Materials", American Society for Mechanical Engineers, 1981.

"Combatting Wear - Laboratory versus Oil-Field Application", ASME technical publication, 1983 ETCE conference, Houston,TX

"Abrasive Wear of WC-Co hard metals", Presented at the AIME Annual Meeting, Los Angeles, Feb. 1984.

"Recent Developments in Wear Resistant Steels", presented at Westec, Los Angeles, March 1984.

"Welding, Cladding and Heat Treating using Lasers", presented at AWS/ASM joint technical meeting, Fullerton, March 1985.

"Laser Surface Heat Treating of Materials", presented at Westec, Los Angeles, March 1987.

"Laser Processing of Materials", ASM-MEI technical course, Los Angeles, March 1989. "Laser Processing of Rock-Bit Cutters", presented at the 1989 ETCE Conference, ASME Petroleum Division, Houston, Jan 1989.

"Laser Post Processing of Hypersonic Flame Sprayed Coatings", published by the Welding Institute, England; also presented at the Twelfth International Thermal Spray Conference, London, England, June 1989.

"Recent Advances in Laser Processing of Materials in the USA", presented through the International Thermal Spray Committee, Fraunhoffer Laser Institute, Aachen, West Germany, 1989

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"Laser Processing of Materials", ASM/AIME Annual meeting - MEI technical course, Indianopolis, Sept. 1989

"Increased Wear and Erosion Resistance of Rock Bits by Laser Applied Coatings", Drilling Technolgy Symposium, Petroleum Division, ASME publication 1990

"Ultrahard Laser Coatings on Rock Bit Cutters for Wear Resistance", 1990 IADC/SPE conference, Society for Petroleum Engineers publication 19910, 1990.

"Metallurgical Characteristics of Laser Cut Aerospace Alloys", presented at the International Conference on Lasers and Electron Optics 1990, Boston.

"Laser Cutting of Aerospace Alloys" paper published by LIA/ICALEO, Laser Institute of America,.1991.

"Failure Analysis of Aerospace Materials", Aerospace Materials Conference, Aeromat Long Beach, May 1991.

"Laser Processing of Materials", ASM-Metals Engineering Institute technical course, San Diego, November1991.

"Laser Cutting and Machining of Aerospace Alloys", technical presentation with L. Migliore, US AMADA, Buena Park, 1992.

"Introduction to Failure Analysis", ASM-Metals Engineering Institute technical course, Los Angeles, May 1992.

Authored over 2000 proprietary technical reports (since 1979) for industrial and legal clients related to product failure analysis, insurance claims, and industrial product / process development

Patents issued to Dr. Naresh Kar

"Dual Squeeze Seal Gland", U.S. Patent 4,429,854, Feb. 1984.

"Hermetically Welded Belleville Seal for Rock Bits", U.S. Patent 4,560,175, Dec. 1985.

"Hermetically Welded Belleville Seal for Rock Bits", U.S. Patent 4,632,401, Dec. 1986.

"Copper-Based Spinodal Alloy Bearings", U.S.Patent 4,641,976, Feb. 1987.

"Cast Steel Rock Bit Cutter Cones having Metallurgically Bonded Cutter Inserts, and Process for Making the Same", U.S. Patent 4,683,781, Aug. 1987.

"Process for Hardening Drilling Bit Cones having Hard Cutter Inserts placed therein", U.S. Patent 4,708,752, Nov. 1987

"Process for Laser Hardfacing Drill Bit Cones having Hard Cutter Inserts ", U.S. Patent 4,781,770, Nov. 1988.

"Hardfacing for Milled Tooth Rock Bits", U.S. Patent 4,836,307, June 1989.

"Rock Bit Insert", U.S. Patent 4, 869,329, Sept. 1989.

"Cast Steel Rock Bit Cutter Cones with Metallurgically Bonded Inserts", U.S. Patent 4,907,665., March 1990.

"Hardfacing for Milled Tooth Rock Bits", U.S. Patent 4,944,774, July 1990.

Other patents pending