

Curriculum Vitae

Bamdad Pournaladian, Ph.D.

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Technical Expert in the field of innovation for tension members utilized in a wide range of industrial markets such as oil&gas, mining, structures, construction, cranes, deep-sea deployment, fishing and aerospace.

Work Experience

8/2020 – Present: *Founding Member, Rope Innovation Group, LLC Kansas City, Kansas , USA*

5/2012 – 5/2020: *Director R&D at WireCo WorldGroup, Kansas City, Missouri , USA*

Duties: Responsible for R&D activities to develop new innovative products for a global market of steel, synthetic fiber, and hybrid tension members. Responsible for patent applications and other IP activities related to the specific R&D projects. Closely collaborating with customers to develop new tension member products for their specific needs. Have directed a multidisciplinary team of 12 engineers and scientists both inside and outside WireCo WorldGroup. Have completed 25 + R&D initiatives yielding a total of over \$29,000,000 in additional high margin revenues.

8/2010 – 5/2012: *Director Product Development at WireCo WorldGroup, Kansas City, Missouri, USA*

Duties: Responsibilities included product development activities for a global market of steel, fiber, and hybrid tension members. Patent application and other IP activities. Closely collaborating with customers to develop new tension member products. Liaison with sales management to select and prioritize R&D projects.

5/2003 – 7/2010: *Manager Product Development at WRCA, Inc., St. Joseph, Missouri, USA*

Duties: Managing product design and development efforts. Writing proposals and reports for internal development projects. Collaborating with external research entities on high-strength steel wire related R&D. Responsible for mechanical testing and evaluation of new steel wire rope products.

7/1988 - 4/2003: *Product Engineer/Research & Development at WRCA, Incorporated*

Duties: Responsible for development of products, processes, and equipment utilizing advanced state-of-the-art technology. Writing proposals and reports for research projects. Developing test and measurement techniques for evaluation of wire products. Participating in corporate and industry technical activities.

8/1984 - 5/1987: *Graduate Teaching Assistant at The University of Kansas Mechanical Engineering Department, Lawrence, Kansas, USA*

Duties: Giving lectures and laboratory teaching in manufacturing processes, instrumentation, thermal and fluid sciences, and mechanical design.

List of Patents

1. Poursadian, B., "High-Strength Fatigue-Resistant Strand and Wire Ropes", US Patent **6,260,343 B1**, 2001.
2. Poursadian, B. Klein, T., "Four Strand Blackened Wire Rope", US Patent **8,438,826 B2**, 2013.
3. Poursadian, B. Klein, T., "Four Strand Blackened Wire Rope", Polish Patent **PL222819 B1**, 2011.
4. Klein, T., Poursadian, B., "Socketing Material and Spelter Assembly for Terminating Tension Member", US Patent **8,327,506 B2**, 2012.
5. Klein, T., Poursadian, B., "Socketing Material and Spelter Assembly for Terminating Tension Member", Chinese Patent **CN 102112756B**, 2013.
6. Klein, T., Poursadian, B., "Socketing Material and Spelter Assembly for Terminating Tension Member", European patent **EP 2,297,471 B**, 2014.
7. Poursadian, B., D'Elia, G. J., "Torque-Balanced Hybrid Rope", US Patent **9,506,188 B2**, 2016.
8. Poursadian, B., D'Elia, G. J., "Torque-Balanced Hybrid Rope", **EP 2,971,331 B1**, 2018.
9. Poursadian, B. Espinoza, L., "High-Power Low-Resistance Electromechanical Cable", US Patent **9,627,100**, 2017.
10. Poursadian, B. Espinoza, L., "High-Power Low-Resistance Electromechanical Cable" Mexican Patent **356167**, 2018.
11. Poursadian, B. Espinoza, L., "High-Power Low-Resistance Electromechanical Cable", US Patent **10,199,140 B2**, 2019.
12. Poursadian, B., Forouzes, E., "Jacketed Torque-Balanced Electromechanical Cable", US Patent **9,691,523 B2**, 2017.
13. Poursadian, B., Forouzes, E., "Jacketed torque-Balanced Electromechanical Cable", US Patent **10,262,771 B2**, 2019.

Publications

- 1) Bamdad Pournladian and John Groce, “A proposal for the numerical and experimental evaluation of temperature rise in synthetic and hybrid ropes used in AHC systems and methods of lessening the effect”, in *Proceedings of the 4th ASME/USCG Workshop on Marine Technology and Standards, Washington DC*, October 16-17, 2017.
- 2) B. Pournladian, S. Munuswamy, “Characterization and Validation testing of a High Strength-To-weight Ratio Torque-Balanced Hybrid Rope”, *Proceedings of OIPEEC Conference, La Rochelle France*, April 2017.
- 3) B. Pournladian, K. Bowland, and M. Janda “Design and Development of Steel Riser Assembly for the Orion Space Capsule” in I.M.L. Ridge ed., *Proceedings of OIPEEC Conference 2015/5th International Stuttgart Ropedays on “Challenging rope applications” Stuttgart, Germany*, March 2015.
- 4) B. Pournladian, “Some recent innovations for production of high-strength and fatigue-resistant 3-strand and 4-strand wire ropes” in I.M.L. Ridge ed., *Proceedings of OIPEEC Conference 2009/3rd International Stuttgart Ropedays on “Innovative ropes and rope applications” Stuttgart, Germany*, pp. 89-99, March 2009.
- 5) Bamdad Pournladian, “Fracture Toughness Evaluation of a High-Strength Cold-Drawn Type 304 Stainless Steel Wire.” in *Wire Journal International*, 36(8), pp. 71-74, August 2003.
- 6) Eric M. Taleff, Garud B. Sridhar, and Bamdad Pournladian, “Strength-Microstructure Relationships in Pearlitic Eutectoid and Hypereutectoid Carbon Steels.” in *Wire Journal International*, 36(10), pp. 73-77, October 2003.
- 7) Bamdad Pournladian and Douglas Hare, “Experimental Determination of Fracture Toughness for High-Carbon Cold-Drawn Steel Wires.” in *Wire Journal International*, 35(7), pp. 77-83, July 2002.
- 8) Eric M. Taleff, John J. Lewandowski, and Bamdad Pournladian, “Microstructure-Property Relationships in Pearlitic Eutectoid and Hypereutectoid Steels.” *JOM*, 54(7), pp. 25-30, July 2002.
- 9) Bamdad Pournladian, “Fracture Toughness Evaluation of a High-Strength Cold-Drawn Type 304 Stainless Steel Wire,” in *2002 Conference Proceedings, Wire and Cable Technical Symposium, 72nd Annual Convention, Chicago, Illinois*, pp. 49-58, June 2002.

Publications continued

- 10) Eric M. Taleff, Garud B. Sridhar, and Bamdad Poursadian, "Strength-Microstructure Relationships in Pearlitic Eutectoid and Hypereutectoid Steels," in *2002 Conference Proceedings, Wire and Cable Technical Symposium, 72nd Annual Convention, Chicago, Illinois*, pp. 79-92, June 2002.
- 11) B. Poursadian, "A Proposal for the Application of Finite Element Analysis and Linear Elastic Fracture Mechanics in Endurance Prediction of Structural Strand Pendants," in I.M.L. Ridge ed., *Proceedings of OIPEEC Round Table Conference on "Rope Terminations and Fittings," Bethlehem, PA*, pp. 57-67, August 2001.
- 12) Bamdad Poursadian and Douglas Hare, "Experimental Determination of Fracture Toughness for High-Carbon Cold-Drawn Steel Wires." in *2001 Conference Proceedings, Wire and Cable Technical Symposium, 71st Annual Convention, Atlanta, GA*, pp. 27-34, May 2001.
- 13) B. Poursadian, "Fracture Toughness Evaluation of High-Strength Cold-Drawn Steel Wires for Use in Wire Ropes," in T. Chandra, K. Higashi, C. Suryanarayana, and C. Tome, eds., *Proceedings of THERMEC 2000, International Conference on Processing and Manufacturing of Advanced Materials, Las Vegas, USA, December 4-8, 2000*, CD-ROM (ISBN 0 08 044026 6) Elsevier Science Ltd. 2001.
- 14) B. Poursadian and R.C. Voigt, "Fracture of Malleable Iron-Part I, Ferritic Malleable Iron," *AFS Transactions*, Vol. 95, pp.515-522, 1987.
- 15) B. Poursadian and R.C. Voigt, "Fracture of Malleable Iron-Part II, Pearlitic Malleable Iron," *AFS Transactions*, Vol. 95, pp.681-688, 1987.
- 16) B. Poursadian listed as a contributor to *Metals Handbook, 9th edition*, Vol. 12 , 1987.

Presentations

- 1) “A proposal for the numerical and experimental evaluation of temperature rise in synthetic and hybrid ropes used in AHC systems and methods of lessening the effect”, invited presentation on a discussion panel at the 4th ASME/USCG Workshop on Marine Technology and Standards, Washington DC, October 16-17, 2017.
- 2) “Some recent technology advancements for ropes used as tension members” invited presentation at the API Offshore Safe lifting Conference & Expo, Houston, Texas, July 11-12, 2017.
- 3) “The new 4-strand light-weight torque-balanced hybrid rope for offshore winching applications” invited presentation at the Research Vessel Operators Committee (RVOC) Annual Meeting organized by UNOLS, Menominee Michigan, April 25th, 2012.
- 4) “Some Aspects of Fracture Behavior of Small Diameter High-Strength Steel Wires” invited presentation at the 6th International Rope Technology Workshop sponsored by the Marine Technology Society and held at Texas A&M University, March 2006.
- 5) “Some Aspects of Fracture Behavior of Small Diameter High-Strength Steel Wires” invited presentation at the Materials Science & Technology 2005 Conference in Pittsburg PA sponsored by TMS and ASM, September 2005.
- 6) “Development of High-Strength Steel Wire Ropes” invited presentation at Marine Technology Society’s 5th International Rope Technology Workshop held in Houston Texas, March 2004.

Educational Background

The University of Kansas	Ph.D. Mechanical Engineering , May 1999 Dissertation title: <i>Fracture Toughness Evaluation of High-Strength Cold-Drawn Steel Wires Used in Wire Ropes.</i>
The University of Kansas	M.S. Mechanical Engineering, May 1988 Thesis title: <i>Fracture of Malleable Cast Iron.</i>
The University of Kansas	B.S. Mechanical Engineering, Jan. 1984

Career highlights

- Participated in development and testing of NASA's Orion Capsule parachute steel riser system. Evaluation of the patented product US Patent # 6,260,343 B1 for this very demanding application.
- Close collaboration with leading researchers in academia in an effort to develop ultra-high strength steel wires for ultra-high strength needs.
- Close collaboration with customers and OEM end users for the development of various innovative tension member products in the oil&gas, structures and crane industry resulting in patented products (US 8,438,826 B2, US 8,327,506 B2, US 9,506,188 B2, US 9,627,100, and US 9,691,523 B2).
- One of the first proposals in the technical literature for the application of FEA and Linear Elastic Fracture Mechanics in the study of fatigue behavior of high strength steel wires.
- An expert in the compaction process for steel strands and ropes. Improved the production efficiency by two folds.
- An expert in the field of fatigue behavior of steel wires and wire ropes. Conducted thousands of fatigue tests and evaluated results to improve manufacturing process.
- Products developed as a results of my efforts were commercialized and generated additional high margin revenues of US \$50,000,000+ during the last 10 years.

Professional Affiliations

Currently serving as a member of the Advisory Board for the Kansas University Mechanical Engineering Department since 2014. Active member of OIPEEC .

Personal

Citizen of United States of America; enjoys spending time with family including three grandchildren; enjoys hiking and swimming; enjoys international travel; enjoys collecting coins, stamps, and seashells.

References

Available upon request