

**Reza MIRSHAMS, PhD**  
**Professor of Mechanical Engineering Technology**  
**Licensed Professional Engineer (PE)**

**SUMMARY**

Dr. Reza Mirshams has Ph.D. degree in Industrial Metallurgy and Metallurgical Engineering from the University of Birmingham, United Kingdom. He is a Licensed Professional Engineer with 40 years combined industrial and academic experience and he is a tenured full professor in mechanical engineering technology at the University of North Texas, Denton. He has taught courses in the areas of metallurgy, corrosion, manufacturing processes of materials, failure analysis of materials, fracture mechanics, fatigue, creep, engineering product design and development, materials selection, and mechanical behavior of materials. His industrial experience includes as technical director in high strength alloyed steel products, sheet metal forming, and galvanizing steel sheets, process engineering design, failure analysis of structural parts due to various loading types, fatigue and creep, fracture mechanics, stress corrosion cracking (SCC), and galvanic corrosion. He has published 105 articles, reports, and presentations in national and international conferences and reports for government and industry. He has testified and has been involved as an expert witness in several materials failure analysis and litigation cases. He is a member of The Minerals, Metals & Materials Society (TMS) and the National Association of Corrosion Engineers (NACE).

**EDUCATION**

Ph. D., Department of Industrial Metallurgy, School of Engineering, University of Birmingham, United Kingdom, 1980.

M. Eng., Metallurgical Engineering, University of Tehran, 1973.

**Engineering Expertise:**

- Materials Failure Analysis, Corrosion Failures, Welding Metallurgy, and Materials Selection/Design.
- Fracture Mechanics, Fatigue, Creep, and Corrosion Risk Assessments.
- Manufacturing Processes (Forging, Rolling, Welding, Casting, Machining, Forming)
- Fatigue Cracks and Stress Raiser Analysis, Impact Failures, Torsion Analysis, Failure Prevention, and Engineering Solutions.
- Materials Specifications and Characterization.

**PROFESSIONAL EXPERIENCE AND EMPLOYMENT HISTORY**

2001 - Present, Licensed Professional Engineer in Metallurgical Engineering (P.E.), Texas.

**Employment History**

2000 - Present: Tenured Full Professor, Department of Engineering Technology, Mechanical Engineering Technology, UNT, Denton, Texas.

2010 - Present: Courtesy Joint Appointment, Department of Mechanical and Energy Engineering, UNT, Denton Texas.

1987 – 2000: Assistant, Associate, and Full Professor (Tenured), Department of Mechanical Engineering, SUBR, Baton Rouge, Louisiana, and collaboration with LSU-Department of Mechanical Engineering.

### ***Teaching Topics***

Engineering Materials (metallurgy, welding metallurgy, microstructure, performance behavior, corrosion, failure analysis, and materials selection), Fracture, Fatigue, Creep, Product Design and Processes, Engineering Ethics.

### ***Industry:***

1982 – 1984: Project Director: IRITEC Company, Engineering and Research Consulting Co.

1980-1982: Technical Director, Rolling Mill and Steel Production Company.

### ***Consulting and Professional Services (1984-present):***

1. **Consulting and Expert Witness**, Several failure analysis cases in the area of defects in materials, corrosion (galvanic and SCC), materials selection, and manufacturing processes.
2. **Zodiac Seat US (Zodiac Aerospace)**, Gainesville, Texas, on Al-Li alloys and stainless steel.
3. **ABET**, Baltimore, Maryland, Engineering and Technology Education Accreditation Evaluator (PEV) and ETAC Commissioner.
4. **OK, International Inc.**, Garden Grove, California, on application of magnetic materials processing.
5. **Lockheed Martin Manned Space Systems**, New Orleans, Louisiana, on Al-Li alloys.
6. **IMEX/S.E.A. Diamond Tools USA, Inc.**, Elberton, Georgia, on superabrasive diamond processing and performance.
7. **Kollmorgen Corporation, Multiwire Division**, New York, on multiwire manufacturing.
8. **Pacific Northwest Laboratory**, Richland, Washington, on fracture toughness of zircaloy.
9. **Adjunct Professor**, Mechanical Engineering Department, LSU, Baton Rouge, Louisiana.
10. **Adjunct Professor**, Hofstra University, Department of Physics, Hempstead, New York.
11. **Key Reader**, (Member of the Board of Editorial Review): Metallurgical and Materials Transactions, ASM and TMS Publications.
12. **Reviewer for the following Journals**, Journal of Materials Research (MRS), Journal of Advanced Materials, ASEE and ASME annual conferences.
13. **Summer 1988 and 1989**, Fellowship, Oak Ridge National Laboratory (Martin Marietta Energy Systems, Inc.).

### **Recent Publications**

1. Reza Mirshams, "A Case Study on Using Corrosion Analysis in Forensic Engineering," Journal of Failure Analysis and Prevention, Volm 5, 2017, 4, 642-646.
2. PR Adhikari, R Mirshams, "Study of Knowledge-Based System (KBS) and Decision Making Methodologies in Materials Selection for Lightweight Aircraft Metallic Structures," Journal of Applied Science & Engineering Technology 5 (1), 1-19, 2017.
3. Mehrooz. Zamanzadeh, Reza Mirshams, Peyman Taheri, "Cathodic Protection, Defective Coatings, Corrosion Pitting, Stress Corrosion Cracking, Soil," NACE - Corrosion Risk Management Conference Proceedings, May 23-25, 2016, Houston, Texas.
4. Mehrooz. Zamanzadeh, Edward Larkin, Reza Mirshams, "Fatigue Failure Analysis Case Studies," Journal of Failure Analysis and Prevention, Volume 15, Issue 6, 803-809, 2015.

### **CONTACT INFORMATION**

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