

Dr. Hira Ahluwalia
MATERIALS SELECTION RESOURCES, INC
8 Hester Court, Pennington, New Jersey, 08534
www.doctormetals.com
Tel: 609-737-8226. Fax: 609-737-7731

SUMMARY

Twenty years of high-level industrial experience working with a broad range of materials and applications.

- CEO of Material Selection Resources Inc, a Materials and Corrosion consulting company.
- Outstanding leadership provided to the corrosion group at FMC, Ciba, Haynes International and Science and Engineering Associates.
- Consulting skills related to material selection for process equipment; corrosion testing and evaluation; equipment fabrication; OSHA 1910.119; troubleshooting materials problems, including failure analysis.
- Proven success at facilitating a systematic approach to problem solving.
- Experience with standard ASTM and NACE corrosion test methods, slow strain rate test methods, crack monitoring systems, electrochemical test methods.
- Proven success in providing technical support to Sales and Marketing.
- Experience in delivering corrosion-related presentations to diverse audiences.
- Proven success at developing viable new alloys.

EXPERIENCE

Chief Executive Officer, Material Selection Resources Inc. New Jersey

- *Material Selection Resources (MSR)* is a Materials Engineering and Corrosion consulting organization serving the chemical, pharmaceutical, manufacturing and metal industries. MSR actively participates in organizations such as NACE International ensuring that we stay at the forefront of materials technology, enabling us to provide our clients with the best, new and novel methodologies to use materials successfully. MSR provides our clients with superior materials and corrosion assistance through its highly qualified staff, and with its many strategic alliances with the premier corrosion and materials professionals and laboratories.

Chemical Industry Experience

Ciba-Geigy, New Jersey

FMC Corporation, New Jersey

Manager, Corrosion and Materials Laboratory

Materials and Corrosion

Consultant

- Managed the Ciba Materials and Corrosion Technology Function; consultant to maintenance, process, production and chemical engineering functions. Consultant to chemical divisions within FMC Corporation.
- Responsible for maintaining an active program in material selection and corrosion prevention.
- Extensive knowledge of the properties and application of engineering materials. Including metals, thermo-plastics and thermo-setting resins, fiber reinforced plastics, and dual laminate construction.
- Increased awareness of corrosion and materials problems and methods of prevention throughout the corporation by publication of periodic newsletter and presentation of seminars.

Metals Industry

Haynes International, Kokomo, Indiana
Group Leader, Corrosion Group

- Supported both Manufacturing and Sales/Marketing needs for Oil and Gas business that has resulted in \$50M sales.
- Developed a high temperature and pressure slow strain rate procedure that has been adopted by the Oil and Gas Industry, testing laboratories and by NACE T-1F-9c committee.
- Provided technical marketing support for the Chemical Process, Refining, Oil and Gas, Bio-Pharmaceutical, Nuclear Waste, Flue Gas De-sulfurization and Pulp and Paper Industries.
- Developed several viable ideas for new alloys, including the most versatile corrosion resistant nickel-base alloy ever produced.
- Interaction with customers on failure analysis and alloy recommendation.
- Represented Haynes at various technical societies and conferences.

Research

Science and Engineering Associates, Livermore, California
Senior Research Consultant, Lawrence Livermore National Laboratory

- Developed corrosion models for performance assessment of High-Level Radioactive-Waste containers.
- Set up an advanced corrosion testing laboratory that met Department of Energy Quality Control Standards.
- Established corrosion test Quality Procedures Manual for High-Level Radioactive-Waste containers.

Academia

University of Manitoba, Canada
Lecturer in Corrosion Science.

- Taught Corrosion Science to undergraduates and graduates of the Mechanical Engineering Department. Topics taught included: fundamentals of corrosion, forms of corrosion, designing to minimize corrosion and corrosion protection methods.
- Research Topic: Physical Metallurgy and Environment Sensitive Fracture of Aluminum Alloys.

EDUCATION

- University of Newcastle, England 1987
Ph.D. in Metallurgy/ Corrosion Science
Title of Thesis: Stress Corrosion Cracking of 70/30 Brass
Supervisor: Professor R.N. Parkins
- University of Newcastle, England 1983
B.S. Honors in Engineering (Metallurgy)

AWARDS

- Distinguished Service Award 2010, National Association of Corrosion Engineers, NACE.
- Saville Shaw Award From the Chemical Society, England, for Ph.D. work.
- Archibald Preece Prize for best performance in B.S. degree.
- First prize in the Tyne and Wear Metallurgical Society Student Lecture Competition, 1986, and finalist in the National Lecture Competition of the Institute of Metals, 1986.

PROFESSIONAL AFFILIATIONS

- National Association of Corrosion Engineers, 1988 to date. Chairman Annual Conference Program Committee, Term: 2006-2008.
- Materials Technology Institute, Member of Technical Advisory Council 1990- date.
- Program Chairman and Presenter, NACE- Corrosion Control in the Chemical Process Industries, September 2000
- Symposium Chairman, MTI First International Conference on Heat Exchanger Reliability, 1998
- American Society of Testing Materials, 1988 to date. Voting Member Committee G-1, 1992.
- American Society of Metals, 1990 to date.
- TAPPI , 1999 to date

SELECTED RECENT PUBLICATIONS

- *H.S. Ahluwalia*, ASM Volume 13 C. Chairman on Section on Corrosion in the CPI, Chapter on Corrosion under Insulation, Corrosion in Organic Solvents, Corrosion in Nitric acid.
- *H.S. Ahluwalia*, Newer Nickel Containing alloys for aqueous corrosion applications in the chemical process industries, *Stainless Steel World*, Summer 2005.
- *H.S. Ahluwalia*, MTI Book- Material Selector for Hazardous Chemicals, Hydrogen Fluoride and hydrochloric Acid, MS Series MS-4, 2003
- *H.S. Ahluwalia*, Material Selection Process for Chemical Plants, *Chemical Equipment*, January 2005
- *H.S. Ahluwalia*, Combating Plate Corrosion, *The Fabricator*, September 2003
- *H.S. Ahluwalia et al.* Editor “ Innovative Approaches for Improving Heat Exchanger Reliability” MTI 1998.
- *H.S. Ahluwalia* “ Material Selection in the Chemical Industry” Chemical Engineers Conference, New York 1997
- *H.S. Ahluwalia et al.*, "Field Experience with Metallic Materials for Various Waste Incinerator Components", 2nd International Conference on Heat-Resistant Materials, Tennessee, ASM , p 637, September, 1995.
- *H.S. Ahluwalia*, " Material Selection for Carbon Bed Adsorption Systems", *Titanium Europe*, Vol 2, Issue 2, 1995.
- *H.S. Ahluwalia*, " Experience with Titanium in Hydrogen Chloride Strippers and Piping", *Titanium World*, Sept 1995.
- *H.S. Ahluwalia, C. Lee*, " Case Histories of Titanium Alloy Usage in the Chemical Industry" Paper no.245 *Corrosion '95*.
- *H.S. Ahluwalia*, "Problems Associated With Slow Strain Rate Quality Assurance Testing of Nickel-Base Corrosion Resistant Alloy Tubulars in Hydrogen Sulfide Environments", ASTM Symposium On Slow

Strain Rate Testing, ASTM STP 1210, R.D.Kane, Ed., American Society For Testing and Materials, Philadelphia, pp 225-240, 1993.

- *H.S. Ahluwalia* and L. Flasche, "Localized Corrosion of the Unmixed Zone in Nickel-Base Alloy Weldments" 12th International Corrosion Congress, NACE Houston, paper no 541, pp 2907, 1993.
- *H.S. Ahluwalia* and F. Hodge, "The Influence of Long-Term Low Temperature Aging on the Performance of Candidate High-Nickel Alloys for the Nuclear Waste Repository", 12th International Corrosion Congress, NACE Houston, paper no 303, pp 4031, 1993.
- *H.S. Ahluwalia*, D.Wu, H.Cai, J.T.Evans and R.N. Parkins, "Cyclic Loading Effects in The Environment Sensitive Cracking of Alpha Brass", Corrosion Science, Vol. 32, No7, pp 769, 1991.