

PROFESSIONAL PROFILE

MANAGEMENT:

President and CEO of Charter Coating Service (2000) Ltd.

TECHNICAL:

Over 25 years of experience in management, marketing, testing, R&D and failure analysis in protective coatings, and industrial water treatment.

EDUCATION:

University of Kent at Canterbury
United Kingdom

Ph.D. – Physical Organic Chemistry
October 1976 – 1980

Kuwait University
Kuwait

B.SC. (Honors) – Chemistry
1972 – 1976

EXPERIENCE:

2000 – Present

Charter Coating Service (2000) Ltd.
6, 4604 – 13th Street N.E.
Calgary, Alberta T2E 6P1 Canada

- President and CEO – See www.chartercoating.com
- Initiated and supervised to completion, over 150 laboratory projects.

1996 – 1997

University of North Carolina at Charlotte
Professor – Part-time Organic Chemistry

EXPERIENCE: (continued...)

1993 –1995

Champion Technologies, Inc. P.O. Box 450499 Houston, TX 77245-0499

- Senior Research Associate (Applied and Industrial Research for Gas and Oil Industry)
- Act as a consultant for the research and development management in various research activities.
- Initiated new ideas for manufacturing efficient and cost effective commercial products for oil and gas field applications.
- Planned and supervised laboratory and pilot plant research projects.
- Provided technical services for end users and prepared technical reports, scientific papers and patents on work completed including recommendations and implementations.
- Developed new cost effective and efficient chemicals and compositions for sweetening hydrocarbons (Patent filed).

1991 –1993

Rice University, Houston TX Department of Environmental Science & Engineering, Houston, TX

- Senior Research Associate (Basic, Applied and Industrial Research)
- Duties and responsibilities include planning and executing research projects, solving problems related to corrosion and scaling in the oil and gas industry. Prepared scientific papers and patents on work completed. This was done as part of the brine chemistry research project. The project was under the Gas Research Institute (GRI) contract and nine members of the Industrial Consortium.
- Developed an analytical procedure for measuring actual bicarbonate alkalinity of field brines.
- Contributed to solving the Naturally Occurring Radioactive Materials (NORM) in Antrium Formation Gas Fields, Northern Michigan (GRI contract study). Identified, for the first time, scale inhibitors for ferrous carbonate (Patent filed).
- Developed apparatus for studying ferrous scales dissolution /precipitation and inhibition under anoxic conditions.
- Applied MINTEQA2 (the geochemical equilibrium computer model) for calculating ferrous solution equilibrium. Studied the dissolution, precipitation and inhibition of ferrous carbonate (siderite) and ferrous phosphate (vivianite) under anoxic conditions.

EXPERIENCE: (CONTINUED...)

1990 –1991

Charter Coating Service (2000) Ltd., Calgary, Alberta, Canada

- Senior Researcher
- Managed and supervised all laboratory studies.
- Trained staff and maintained effective business and professional relationships with clients.
- Wrote all technical reports on completed studies. Completed more than 50 short and long-term projects.

1980 –1990

Kuwait Institute for Scientific Research (KISR), Kuwait

- Research Scientist (Applied and Industrial Research)
- Duties and responsibilities included planning, supervising, managing, and executing research projects; solving water treatment of industrial problems; developing proposals for local contract research; imparting theoretical and practical training to junior staff and university students.
- Wrote critical reports and scientific papers on work completed including recommendations and implementations.

PUBLICATIONS:

1. Al-Borno, Amal, Chen, Xianyi (2019) “Effect of High Temperature Sodium Hydroxide Immersion on Fusion Bond Epoxy Coating”, presented at the NACE International Northern Area Conference, Calgary, Alberta, Canada.
2. Morton, David, Liliana Madaleno, Chaloner-Gill, Benjamin, Quintero, Martin, Al-Borno, Amal (2018) “Volumetric Superhydrophobic Coatings for Offshore Corrosion Protection”, presented at NACE International Corrosion Conference, Phoenix, Arizona, U.S.A.
3. Al-Borno, Amal, Xianyi, Chen (2018) “Laboratory Test Methods to Study Potential Cathodic Protection Shielding for an External Pipeline Liquid Epoxy Coating and Support Geotextile Pipeline Weight Bags”, presented at the 17th Middle East Corrosion Conference in Bahrain.
4. Melancon, Michael, Hunter, Paul, Hourcade, Steve, Al-Borno, Amal, Liskiewicz, Tomasz, Rao, Sherry, Salamah, Bassem, Dhoke, Shailesh, Cortes, Julius and Chen, Xianyi (2014) “The Effect of Four Commercially Available Steel Decontamination Processes on the Performance of External Coatings”, presented at the NACE International Corrosion Conference, San Antonio, Texas, U.S.A. Also presented at the 15th Middle East Corrosion Conference in Bahrain.
5. Liskiewicz, Tomasz, Al-Borno, Amal (2014) “DLC Coatings in Oil and Gas Production”, presented at the NACE International Northern Area Western Conference.

6. Al-Borno, Amal, Brown M., Chen X., Chauviere M. (2012) "Identification and Testing of Potential Coatings For Use on Walls of Bag House of Flue Gas Desulfurization Process", presented at the NACE International Conference, Salt Lake City, Utah, U.S.A.
7. Al-Borno, Amal, Brown M., Nabhani T., Behlani N., Al-Harthy A., Barry J (2012) "New Specification for Internal Liquid Epoxy Coating Systems For Carbon Steel Pipes and Line Pipes", presented at The Middle East Corrosion Conference, Bahrain.
8. Al-Borno, Amal, Brown M., Rao S., Di Flumeri G A (2011) " Joint Coating Selection for Application Over Existing Coat Tar Wrap and Yellow Jacket Coated Pipeline", presented NACE International Conference, Houston, Texas, U.S.A.
9. Al-Borno, Amal, Brown M., and Rao, Sherry (2010) "High Temperature Cathodic Disbondment Test" presented at NACE International Conference, San Antonio Texas U.S.A.
10. Chang, B, Knudsen, O, Wong, D, Holub, J, Al-Borno, Amal, and Kehr, Alan. "Critical Evaluation of International Standards on Cathodic Delamination Test Methods" 17th ICC, hosted by NACE International Conference Oct. 2008 in Las Vegas. Also presented on 2009 at SSPC – Goa – India.
11. Al-Borno, Amal, Brown M., and Rao, Sherry (2008) "The Effect of Anode Isolation methods on Coating Cathodic Disbondment" presented at the NACE International Conference, Atlanta Georgia U.S.A
12. Al-Borno, Amal and Brown M., Worthingham, R and Cetiner, M (2008) "Comparison of Polysiloxane Two-Coat Systems VS.A Tradition Three Coat System As External Paint Systems Over Steel for Canadian Applications" presented at the NACE International Conference, Atlanta Georgia U.S.A
13. Al Hashem A., Carew J., Al-Borno, Amal, Brown M, and Owen, D. (2007) "Evaluation of Combination Effects of Oilfield Chemicals for Application in Water Injection Systems" presented at the NACE 2007 International Conference, Nashville U.S.A
14. Al-Borno, Amal and Brown M. (2007) "Comparative Testing of 31 Tank Lining Systems" presented at the NACE 2007 International Conference, Nashville U.S.A
15. Al-Borno, Amal, Brown M, and Oliphant, Scott. (2006) "Tank Lining Coating Selection based on Laboratory Tests" presented at the NACE 2006 International Conference, San Diego U.S.A
16. Al Hashem A., Carew J. and Al-Borno, Amal (2006) "Evaluation of Green Chemicals for the Application in GC-17 Effluent Water, Seawater Effluent and Zubair Aquifer Water Injection Systems (2006)" presented at the NACE 2006 International Conference, San Diego U.S.A
17. Al Hashem A., Carew J., Al-Borno, Amal., and Brown M. (2005) "Laboratory Evaluation Study of Continuous Corrosion Inhibitors for West Kuwait Oil Fields Injection System" presented at the NACE 2005 International Conference, Huston U.S.A
18. Al Hashem A., Carew J., and Al-Borno, Amal (2005) "The Synergistic / Antagonistic Effect of Water Treatment Chemicals on Corrosion Inhibition of Carbon Steel in the

Water Injection System of West Kuwait Oil Fields” presented at the NACE 2005 International Conference, Huston U.S.A

19. Al-Borno, Amal, and Brown M. (2005) “Tank Lining Coating Selection Based on Laboratory Tests” presented at the NACE 2005 International Conference, Huston U.S.A
20. Al-Borno, Amal, and et al. (2004) "Testing and Selection of Girth Weld Protective Coatings." presented at the NACE 2004 Regional Conference, Victoria, B.C. Canada.
21. Al-Hashem A., Crew J. and Al-Borno, Amal, (2004)"Synergistic and Antagonistic Effect s of Corrosion Inhibitors, scale inhibitor and Biocide on the corrosion Rate of L80 Steel in Seawater, Brine Water and A Mixture of Both." presented at the NACE 2004 International Conference, New Orleans, U.S.A.
22. Al-Hashem A., Crew J. and Al-Borno, Amal, (2004) "Laboratory Evaluation Study of Scale Inhibitors for West Kuwait Oil Fields Injection System." presented at the NACE 2004 International Conference, New Orleans, U.S.A.
23. Al-Hashem A., Crew J. and Al-Borno, Amal, (2004) “Screening Test for Six Dual Biocide Regimes against Planktonic and Sessile Populations of Bacteria." presented at the NACE 2004 International Conference, New Orleans, U.S.A.
24. Al-Borno, Amal, (2003) "Coating for Damp Pipe Surfaces." presented at the NACE 2003 International Conference, San Diego, U.S.A.
25. Al-Borno, Amal, (2003) "Market Survey of Coatings for Offshore External Mainline and Joints." presented at the NACE 2003 Northern Area Conference, Calgary, Canada.
26. Al-Hashem A., Crew J. and Al-Borno, Amal, (2003) "Synergistic and Antagonistic Effect s of Corrosion Inhibitors, scale inhibitor and Biocide on the corrosion Rate of L80 Steel in Seawater." presented at the NACE 2003 International Conference, San Diego, U.S.A.
27. Al-Borno, A. Y. (1995) "Composition and Method for Sweetening Hydrocarbons", (Patent filed).
28. Al-Borno, A. Y., M. B. Tomson (1994) "The Temperature Dependence of the solubility Product of Ferrous Phosphate (Vivianite)", *Geochimica et Cosmochimica Acta*. Vol 58, No. 24, 5373-5378.
29. Al-Borno, A. Y. and M. Islam. (1994) "Water Treatment for Open Recirculating Cooling Systems Using Molybdate/Phosphate Blends". Presented at the NACE International Conference, Baltimore, U.S.A.
30. Oddo J. E., Al-Borno, A. Y., D. Pope, I. Ortix, D. Linz, J. Frank, D. Hill, D. Nakles, D. Becker and M. B. Tomson. (1993). "The Chemistry, Prediction and Treatment of Scale Containing Naturally Occurring Radioactive Materials (NORM) in Antrium Formation Gas Fields, Northern Michigan", SPE 25485.
31. Al-Borno, A. Y., J. E. Oddo and M. B. Tomson. (1992) "Scale Inhibitors for Siderite", patent pending.

32. Al-Borno, A. Y., J. E. Oddo and M. B. Tomson. (1992) "Naturally Occurring Radioactive Materials (NORM) Scale Formation – Chemistry, Prediction and Treatment", Proc. of Production", Lansing, Michigan, 16-17 March.
33. Al-Borno, A. Y., (1990) "Treatment of Cooling Water Systems Based on Low Nitrites, Molybdates and Phosphates", Proceedings of the 7th European Symposium on Corrosion Inhibitors, Ferrara, Italy, 15-19 September.
34. Al-Borno, A. Y. and R. Khraishi, (1990) "Scale Inhibitors for Desalination Plants, State of the Art", Proceeding of the International Desalination Conference, Florida, U.S.A.
35. Al-Borno, A. Y. and M. Abdel Jawad. (1989) "Conventional Pre-treatment of surface Seawater for Reverse Osmosis Applications", State of the Art, Desalination, V74, N 1-3, P3-36. This paper was also presented at the 4th World Conference on Desalination and Water Reuse. Kuwait, 4-8 November.
36. Al-Borno, A. Y., M. Islam and R. Haleem. (1989)"Synergistic Effect Observed in Nitrite Inorganic – Phosphate Inhibitor Blends", Corrosion, V45, N 12, P 990-995. This same paper was also presented at the 27th Australian Corrosion Conference, Adelaide, Australia, November 1987.
37. Al-Borno, A. Y., M. Islam and R. Khraishi. (1989) "Multi-component Corrosion – Inhibitor System for Recirculating Cooling Water System Based on Nitrite, Molybdate and Inorganic - Phosphate", Corrosion, V45, N 12, P 970-975.
38. Al-Borno, A. Y. and D. B. Bigely. (1983) "Studies in Decarboxylation. Part 16. Steric Inhibition of Resonance in a 1.5– Sigma Tropic Reaction". J. Chem. Soc. Peerkin Trans. 11, P 1311-1312
39. Al-Borno, A. Y. and D. B. Bigely. (1982) "The Effect of 3-M Substitution in the Rate of Decarboxylation of B2-Unsaturated Acids". J. Chem. Soc. Peerkin Trans. 11, P 15-17.
40. Al-Borno, A. Y. and D. B. Bigely. (1978) "Dramatic Acceleration of a Concerted Reaction by a Methoxy Group", J. Chemical Society, Chemical Communication, P 1025.

MEMBERSHIPS:

- The Society for Protective Coatings (SSPC)
- Society of Petroleum Engineers (SPE)
- National Association of Corrosion Engineers (NACE)
- American Chemical Society (ACS)
- International Union of Pure and Applied Chemistry (IUPA)

Professional Activities in NACE:

1. TG 521, Vice Chair, "Testing of Nonshielding Property of Pipeline Coatings to Cathodic Protection."
2. TEG 349x, committee member, "Critical Review of International Test Standard on Cathodic Disbondment".

3. TG 266, Chair for review TM017402, "Laboratory Methods for the Evaluation of Protective Coatings and Lining Materials on Metallic Substrates in Immersion Service".
4. TG 034, committee member, "Test Method for Measurement of Gouge Resistance of Coating System".