

TAO HONG

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SUMMARY

- ◆ More than ten years extensive experience in University and Industry in Materials Science and Technology; Corrosion Science and Technology; Surface Science and Technology.
- ◆ Strong background in corrosion and inhibition researches, materials selection, and machine design.
- ◆ An excellent knowledge in Chemical and Electrochemical processes.
- ◆ Very good skills for surface analysis (SEM, X-ray and AES).
- ◆ Technical achievement is reflected by numerous publications in various renowned journals.
- ◆ Computer skills in Excel, Word, Power point, Visual Basic, Fortran.
- ◆ Fluent in English, Japanese and Chinese.
- ◆ Substantial marketing experience in Asia-Pacific.
- ◆ Project manager in University and Industry.

PROFESSIONAL EXPERIENCE

10/01 ~ PRESENT

SENIOR MATERIALS ENGINEER, MONSANTO ENVIRO-CHEM SYSTEM

Responsible for project management, materials selection, corrosion consulting

- Managed projects for acid plant products
- Selected economic materials instead of previous materials
- Updated exist equipment Solved numerous corrosion problems for users.
- Worked with Institutes and Universities for materials and corrosion research

8/98 ~ 10/01

UNIVERSITY RESEARCH ASSISTANT PROFESSOR AND ASSISTANT DIRECTOR OF CORROSION CENTER, INSTITUTE FOR CORROSION AND MULTIPHASE TECHNOLOGY, OHIO UNIVERSITY.

Responsible for R&D of new techniques to determine corrosion, erosion and inhibition in pipelines under multiphase flows. Project management and supervision

- Obtained important information on inhibition performance of the current commercial products at high temperature and pressure, which is not available in the literature.
- Selected materials for pipes, heat exchangers, pumps, compressors, tanks, tubes, etc for refinery and chemical process industries
- Firstly developed Electrochemical Impedance Spectroscopy (EIS) and Electrochemical Noise (ECN) techniques for determining corrosion and inhibition in large pipelines in multiphase flow.
- Used an innovative approach to find answer to some difficult questions, such as porosity, thickness and their interactive relationship, that had not been understood previously due to its technical difficulties.
- Introduced a new model for corrosion of carbon steels in CO₂ environment.
- Evaluated corrosion rates in wet gas pipelines at different temperature.
- Succeeded in monitoring of the formation and destruction of corrosion product and inhibitor films in pipelines using electrochemical techniques.
- Successfully established a relationship between porosity of inhibitor film and warburg impedance coefficient obtained from EIS experiment.
- Worked with Chevron Company to select steel and inhibitor for oil & gas industry.

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- Developed software for simulating corrosion in pipelines under different flow conditions.
- Introduced electrochemical techniques for studying mass transfer in multiphase flow.

4/93 ~ 8/98

SENIOR RESEARCH SCIENTIST, R & D LABS, NIPPON KINZOKU CO. LTD., TOKYO JAPAN.

Team leader in corrosion group. Responsible for study of corrosion, oxidation, surface preparation processes, material testing, and surface analysis. Technique consultant for Chinese steel and chemical companies.

- Studied crevice, pitting corrosions and SCC for stainless steels in different environments.
- Computerized testing - fracture toughness, stress corrosion cracking, fatigue, crack growth, tensile.
- Studied surface preparations for various steels (passivation, coating, polishing, electrochemical-Deposition).
- Firstly introduced a new technique for examining pitting corrosion of stainless steels using EIS technique.
- Introduced electrochemical techniques and surface analysis for examining porosity of thin film formed on metals.
- Improved production process for etching surface of metals.
- Succeeded in novel process for Ti electrochemical-deposition on stainless steels in molten salt solution.
- Designed production line for rapid Cu electrochemical-deposition on stainless steels.
- Upgraded surface quality of stainless steel parts for automobile and chemical industry (passivated film and Ni electrochemical deposition).
- Worked with automotive industry to select metal parts for automobile production.
- Developed production process for coloring stainless steels with chromate.

7/85 ~ 9/88

ENGINEER, RESEARCH DEPT., SHANGHAI AUTOMATIC EQUIPMENT CO. LTD., SHANGHAI, CHINA,

Responsible for machine design, materials selection and material testing.

- Designed Auto-machine for measuring temperature for chemical industry.
- Developed production process for pressure sensor.
- Joined project team for developing the instrument for corrosion test.

EDUCATIONAL BACKGROUND

- ◆ Ph.D., Dept. of Materials Science & Technology, Waseda University, Japan, 1998
Dissertation Title: Study on Early Stages of Pitting Corrosion of Ferritic Stainless Steels
- ◆ M.S., Dept. of Materials Science & Technology, Waseda University, Japan, 1991-1993
- ◆ Research student, Dept. of Materials Science & Technology, Waseda University, Japan, 1990-1991
- ◆ Fellow student, Japan International Language College, Tokyo Japan. 1988-1990.
- ◆ B.S., Dept. of Mechanical Engineering, Shanghai University, Shanghai, China, 1981-1985.

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SPECIAL TECHNIQUES

Chemical and Electrochemical techniques (electrochemical impedance spectroscopy, electrochemical noise analysis, anodic and cathodic polarization, paint, filming and etching); Surface analysis (Scanning electron microscope, X-ray analysis, Auger electron microscope)

HONORS AND AWARDS

- ◆ Scholarship of Ministry of Education, Japan, 1992.
- ◆ Outstanding research student in Waseda University, Japan, 1992.
- ◆ Outstanding reviewer of the CORROSION/2000 symposium, NACE/2000.

PROFESSIONAL MEMBERSHIPS

The electrochemical Society, National Association of Corrosion Engineers (NACE), Society of Petroleum Engineers (SPE).

PROFESSIONAL ACTIVITY

- ◆ Sponsoring committee reviewer for NACE/2000 papers.
- ◆ Chief editor in one of the technical committees within NACE (T-1D-27 group).
- ◆ Contributor of the book "Corrosion in Multiphase Environment".

PROFESSIONAL PUBLICATIONS AND PRESENTATIONS

List attached.