

FARADAYIC® Corrosion Services

Objective:

Faraday has developed a capability for novel approaches to corrosion projects, combining corrosion expertise with design and fabrication of test stations and simulated corrosion environments. These examples provide an indication, but not the full extent, of our capabilities.

Summary:

1) *ICF Kaiser Engineers, Inc.*

Remediation of a field that contained buried chemical warfare munitions, was done by accelerating leakage of chemical warfare agents into the groundwater, and cleanup of the groundwater. The goal of chemically enhanced corrosion is to increase the corrosion rate of the munitions, accelerating the remediation process. Faraday developed test methods to determine promising solutions for enhanced corrosion, using laboratory testing under simulated conditions. One test phase simulated the conditions at Old O-Field using 4 x 6 ft soil columns, 6 inches in diameter, that were filled with layers of soil and sand from the site, and contained coupons cut from old munition casings.



2) *U.S. Consumer Products Safety Commission*

Faraday recently investigated the failure of a number of mechanically complex fire sprinklers. Large variations in pressure required to deploy the sprinklers suggested that the failed components had higher friction than those which activated. Faraday designed and built a unique teardown fixture to sequentially remove parts of the sprinkler head, which allowed us to determine the point of failure, with subsequent chemical, dimensional and mechanical analyses at that point determining the possible cause. This work was part of an effort that culminated in the recall of over 8 million fire sprinklers.

3) *Bechtel*

Faraday was involved in materials testing and selection of alloys for power generation applications, using sophisticated electrochemical testing. The tests utilize heated Avesta cells (temperatures up to 100°C), to study pitting corrosion under simulated service conditions, without the occurrence of crevice corrosion which traditionally plagues pitting corrosion testing.

Background:

The patented FARADAYIC Process is an electrochemical technology that utilizes a controlled electric field to address industrial problems. Faraday's expertise with electrochemical techniques is applied to solving material degradation problems.

The FARADAYIC Process technology illustrated above is protected by a substantial patent portfolio including issued, allowed, and pending patent actions.