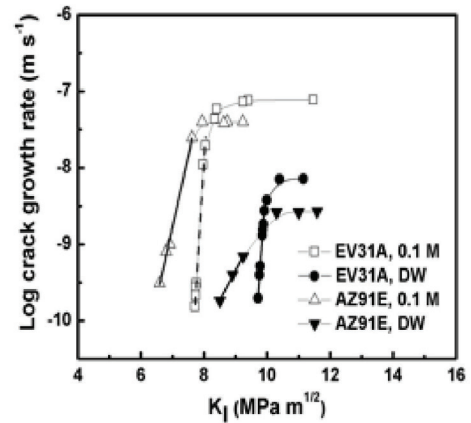


Proactive management of assets against corrosion failure



Experimental setup:
Study and control of
fracture in corrosive
environment



Corrosion affects productivity, safety, reliability and hence global competitiveness of all industries. Importantly, they affect the environment and devour the finite natural resources that are available to mankind and so cause irrecoverable damage to a nation. As new technologies evolve, tolerance to corrosion becomes stringent, requiring advanced research in this area. The following expertise is developed to address this concern.

Processing-structure-corrosion property correlation research is the main focus of aqueous corrosion research. This has led to developing:

- Special aging treatment for Al-Zn-Mg high strength alloys to provide not only high strength (better than that of peak-aged condition) but also high stress corrosion cracking resistance
- Low cost AISI type 316L stainless steel body implants with significant improvement in localised corrosion and wear and with good biocompatibility
- Mechanisms and identification of the stability of Ti-6V-4Al and IMI 834 titanium alloys martensitic stainless steel (S80) and IN 718 towards hot salt stress corrosion cracking for gas turbine applications
- Highly deformable and corrosion resistant hot-dip galvanised alloy coating
- Predictions of plausible corrosion failure mechanisms for proactive management of assets
- Expertise on materials selection and root cause analysis against industrial corrosion failures; addressed over 100 such failures to provide solutions