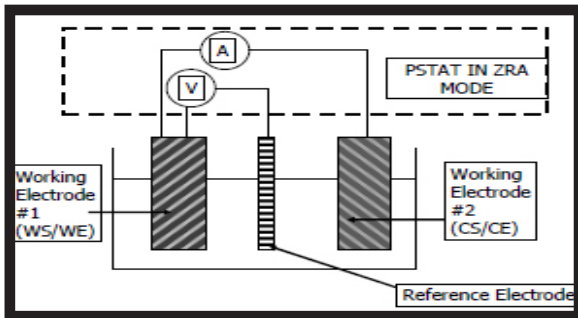
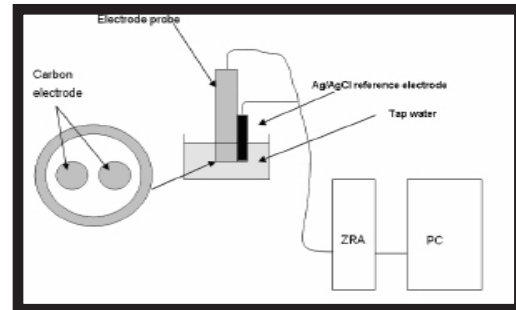


## Seeding Fund Project

### Evaluation of Electrochemical Potential (ECP) Technique for On- Line Monitoring of Crack Growth on TNB Power Plant Pressure Vessel Component



Electrochemical cell setup



Experimental Setup Diagram

#### Project Overview

In the past, catastrophic failures of deaerators or any pressure vessels for that matter have caused serious damages and fatalities. These failures originate from cracks caused by residual, thermal, static and dynamic stresses. Crack growth is accelerated by corrosion fatigue. Welds deformities and hardened material in the heat affected zones can also contribute to these failures. The purposes of this project are to obtain online measurements of ECP behaviour at weld locations in a working deaerator at Sultan Ismail Power Station (SJSI), Paka and to assess the possibility of using this technique as a standardized guideline for crack growth monitoring of a working deaerator.

#### Deliverables

- Reports on the literature review of the proposed technique
- Reports on the condition assessment of the weldment (working deaerator)
- Presentation on the findings and proposed maintenance guideline

#### Benefits

- Enhance the capability of Material Engineering Group in the area of Pressure Vessel Assessment, and applications of ECP inspection technique.
- Experience from this project will provide a good platform for replication of this technique at other TNB power plants or external customer.
- Improve the rate of utilization for equipment/software available in TNBR.