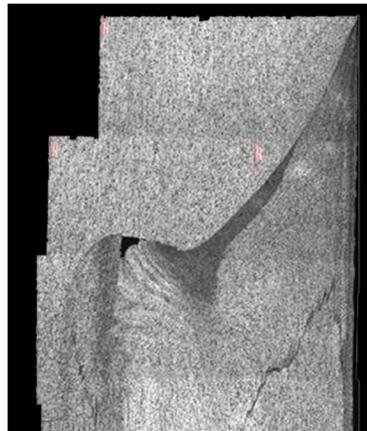
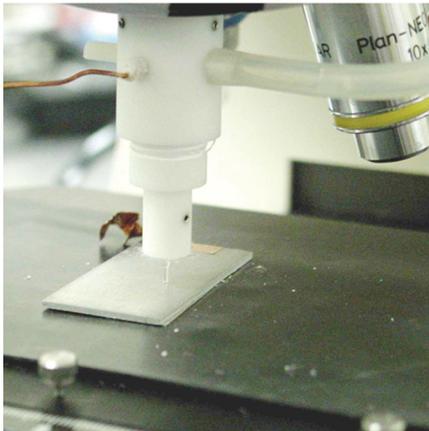
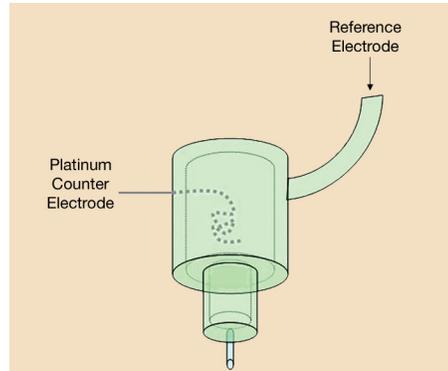
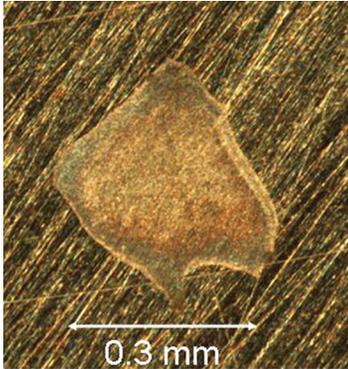


# John F. Kennedy Space Center's Microelectrochemical Cell for Corrosion Evaluation



## BENEFITS

- Does not expose entire sample to electrolyte or masking agent
- Allows for many measurements on a single sample
- Performs all common electrochemical and corrosion measurements

The National Aeronautics and Space Administration (NASA) seeks to transfer the NASA-developed microelectrochemical cell for evaluating corrosion on small areas. The NASA Corrosion Technology Laboratory at the John F. Kennedy Space Center (KSC) has built a microelectrochemical cell for measuring electrochemical properties with a high spatial resolution. Using the cell for this type of measurement does not expose the entire sample to the electrolyte or other masking agent. This allows for many measurements to be made on a single sample, unlike conventional electrochemical tests. This is an ideal technique for measuring corrosion properties on materials that have highly different areas, such as welds.

opportunity

## APPLICATIONS

- The microelectrochemical cell can be used in corrosion research laboratories to examine small areas on metal surfaces.

## TECHNOLOGY STATUS

- Patent pending
- U.S. patent
- Copyrighted
- Available to license
- Available for no-cost transfer
- Seeking industry partner for further codevelopment

## Technology Details

The cell was developed to investigate the corrosion properties of a friction-stir weld. Friction-stir welding is a process in which frictional heat from a rotating bit touches a seam where two pieces of metal are placed together, softens the metals, then joins them. The microelectrochemical cell was used to show how the friction-stir welding process affected the metal's corrosion properties. The cell consists of a Teflon body for the electrolyte, ports for a capillary tube, counter electrode, and reference electrode. The electrolyte makes contact with the sample through the capillary tube. The device is mounted on a microscope in place of an objective so that the area being tested can be seen. The cell is rotated in and out of the optical path.

## Partnership Opportunities

NASA is offering the microelectrochemical cell for corrosion evaluation to industry through a no-cost transfer. If your company is interested in this new technology, or if you desire additional information, please reference Case Number KSC-12935 and contact:

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