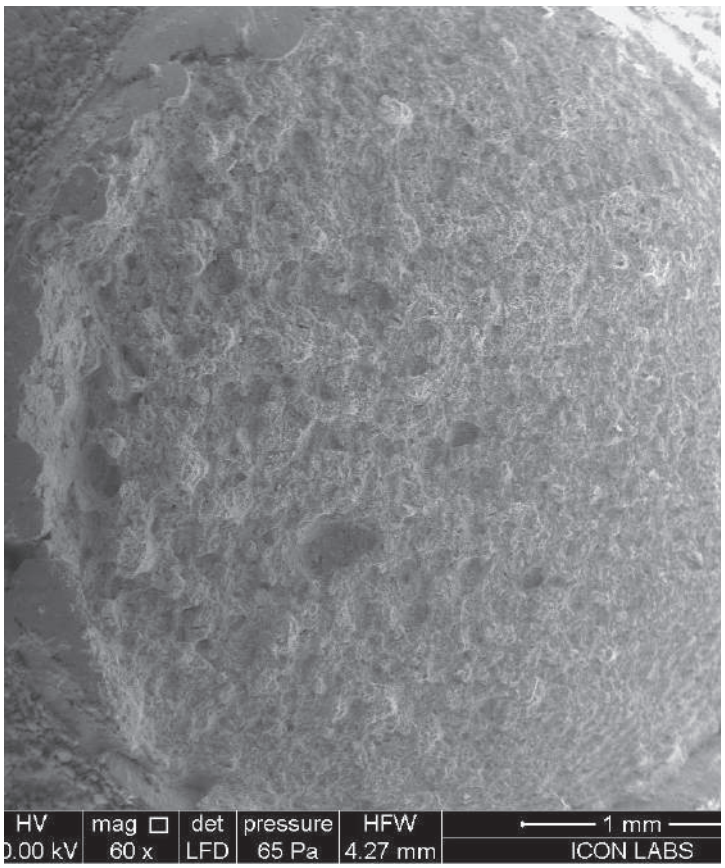
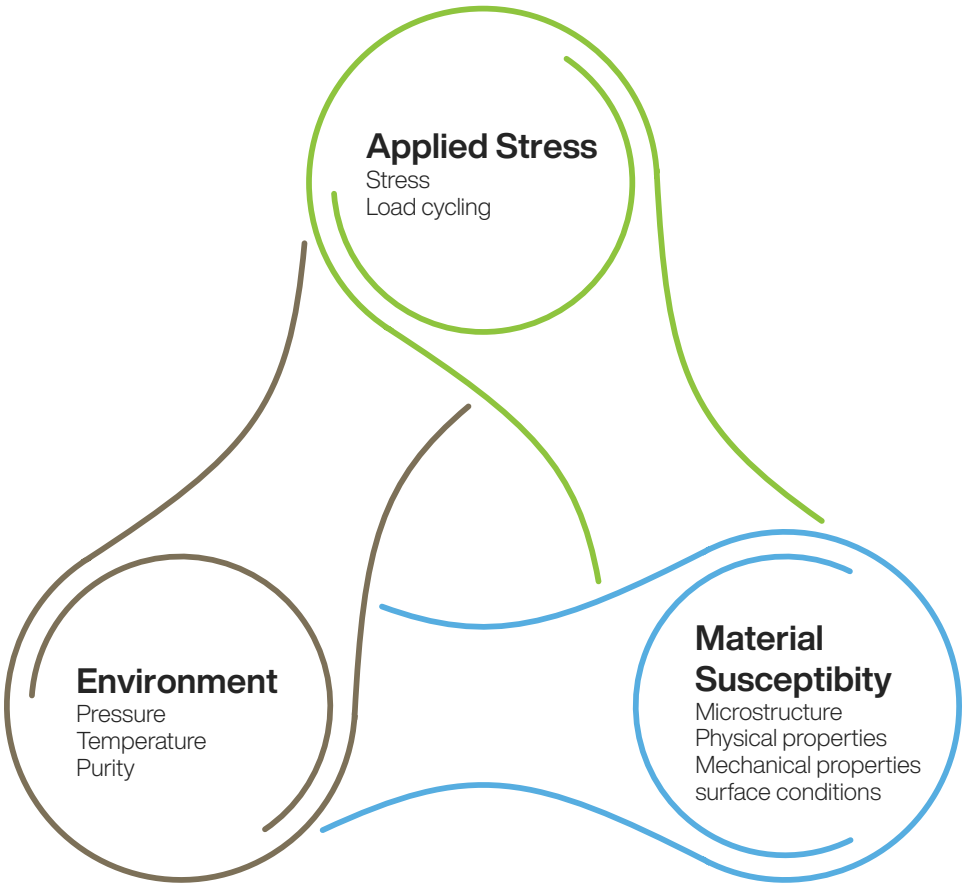
HYDROGEN EMBRITTLEMENT TEST

Hydrogen evolution is the most common by product in the electrodeposition process which may be co-deposited onto the surface of the substrate along with the metal ions. This can result in a potentially harmful condition known as hydrogen embrittlement. Hydrogen embrittlement is a loss of ductility due to excess hydrogen absorption, which makes the material brittle.

The **Hydrogen embrittlement** test describes the mechanical test methods to evaluate the susceptibility of plating/coating processes to undergo hydrogen embrittlement. Additionally, subsequent exposure to encountered service environments can also be evaluated using this test method. We perform the test using a notched C-ring self-loading specimen as per Annexure 2, wherein an incremental step-loading technique is used to detect the onset of subcritical crack growth as a measure of the threshold stress, which quantifies the amount of residual hydrogen in a specimen. This method ensures that coatings or plating processes are assessed accurately for durability in real-world applications. Furthermore, it helps in identifying and mitigating potential failure risks due to hydrogen-induced cracking under various service conditions.





Ensure the reliability and durability of your coatings and plating processes with our advanced **Hydrogen embrittlement** testing, designed to safeguard against potential failures in demanding service environments.