



**Ensuring Ultrapure Water
Quality QUA's with FEDI®
Solution for India's Pioneering
OSAT Semiconductor Facility**



QUA®
Pure Technology



Client: Global Semiconductor Manufacturer

Plant Location: Gujrat, India

One of the world's largest semiconductor manufacturers is establishing its first outsourced semiconductor assembly and testing (OSAT) facility in India under the government's modified Assembly, Testing, Marking and Packaging (ATMP) scheme.

This project marks a significant milestone for the company and the Indian semiconductor sector. The new OSAT facility will play an integral role in the semiconductor manufacturing process, performing critical tasks, such as testing and packaging silicon chips, and serving as a vital link in the semiconductor supply chain.

Challenges:

Ultrapure water (UPW) is a critical component in semiconductor manufacturing, where even the slightest impurity can impact production quality. To meet the stringent requirements of this process, the manufacturer required a highly reliable UPW system capable of producing 4.5 m³/hr of UPW with a feed conductivity of <0.1 μS/cm to meet the high-precision standards of the semiconductor industry.

QUA's Solution:

Following a stringent technical evaluation, the manufacturer selected QUA's FEDI[®] fractional electrodeionization technology for its UPW system. QUA's state-of-the-art FEDI[®] solution was selected for its ability to consistently produce high-purity water up to 18 MΩ.cm (0.056 μS/cm) through its patented process. This solution ensures the UPW system meets the highest quality standards essential for semiconductor manufacturing.

Flow Diagram:



Results:

The FEDI[®] system reliably delivers ultrapure water for critical semiconductor manufacturing processes, such as the washing and testing silicon chips and power tools. The FEDI[®] system operates continuously without interruption, consistently meeting the required flow rate and conductivity while adhering to all the predefined norms and standards. This consistent performance has equipped the semiconductor manufacturer's OSAT facility with a dependable supply of ultrapure water, which is crucial for upholding the precision and quality standards essential in semiconductor manufacturing.