

Full automatic clean assembly of HWR cavity

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Cleanroom processing and assembly are critical for ensuring optimal performance of SRF (Superconducting Radio Frequency) cavities. Human activities are a significant source of particle emissions in cleanrooms, posing a risk of cavity contamination. To mitigate this risk and reduce labor costs, the implementation of robotics in cleanroom environments has garnered increasing attention in recent years.

In the pursuit of automated HWR (Half-Wave Resonator) cavity assembly, several key processes have been identified and segmented from the traditional cleanroom assembly workflow. These processes include cavity transportation and automated handling, nut placement, and fastening, among others. This report will provide an overview of these decomposed processes, along with the results of their implementation.

Footnotes

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