

# 11th International Workshop on Thin Films and New Ideas for Pushing the Limits of RF Superconductivity - TFSRF2024



Contribution ID: 102

Type: **not specified**

## Status of the Inner-wall Thermal Conducting Film (ITCF) Study

*Thursday 19 September 2024 14:12 (23 minutes)*

To enhance heat-transfer efficiency in SRF cavities, we previously introduced a novel approach that coats the cavity with an inner-wall thermal-conducting film (ITCF). Simulation results showed that ITCF absorbs heat from the RF surface and transmits it to cooler neighbouring regions on the inner wall, thereby reducing the heating-point temperature via an extra heat-transfer route. This work presents the set-up of the cryogenic temperature multi-test system in IMP, the preliminary thermal conductivity test for relevant materials that include substrate and film, and the coating properties of ITCF candidates on small samples.

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**Session Classification:** Functional Layers -Synergies

**Track Classification:** Functional layers and synergies