

PIP-II

Project Director Report



June 2022

PROJECT HIGHLIGHTS

- Project leadership updates
- High-power RF and vacuum updates
- New chemical treatment for cavities
- ORBUMP magnets complete Final Design Review

UPCOMING EVENTS

11 July	P2PEB #12
12–14 July	Technical Workshop

Project leadership updates

On June 17, Rich Stanek took over as the interim PIP-II Project Director. Most recently the Deputy Division Head for the SQMS Center, Rich will maintain some level of effort on SQMS, but his primary focus will be PIP-II.

Meanwhile, Luisella Lari will be the interim PIP-II Project Manager while continuing to serve as In-Kind Contribution Manager for the PIP-II project.

Congratulations, Rich and Luisella!



Rich Stanek



Luisella Lari

High-power RF and vacuum updates

Circulators sit at the output of the Solid State Amplifiers to ensure the radiofrequency power produced only goes into a cavity or load and does not get reflected back into the amplifier. The circulator is being tested in its test stand at F0 (pictured to the right); once validated, it will go to CMTF for pHB650 cryomodule testing.

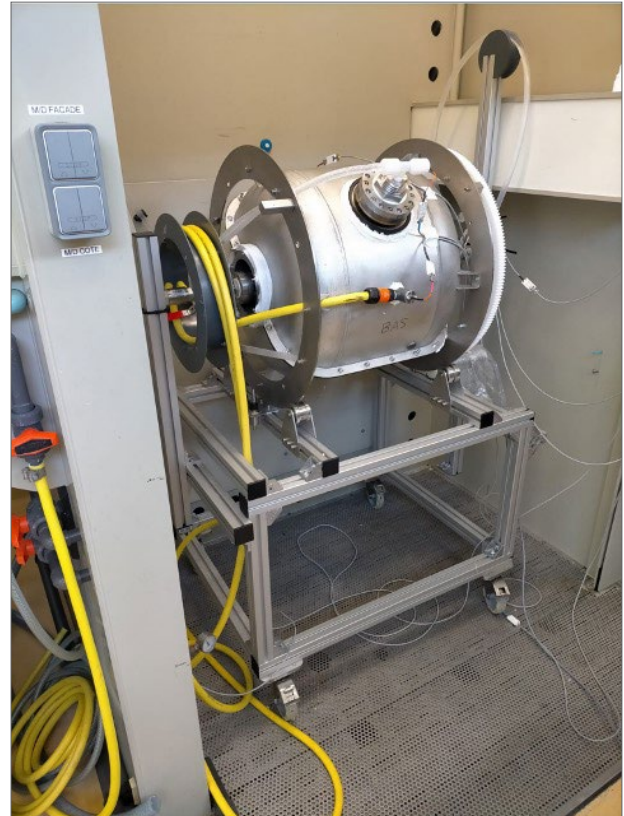
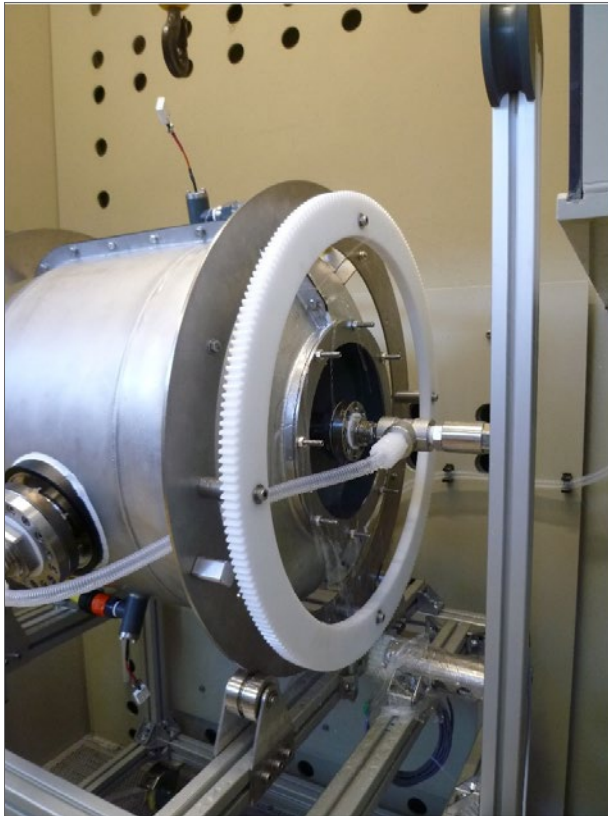
In addition, NEG (non-evaporable getter) pumps have been installed on the beam line vacuum stations and activated for testing/evaluation after pHB650 is tested.



New chemical treatment for cavities

Our partners at the Irène-Joliot Curie Physics of Two Infinities Lab (IJCLab - Université Paris-Saclay, CNRS) performed a buffer chemical polishing (BCP) on one of the first pre-production SSR2 cavities. This was the first cavity to receive this chemical treatment at IJCLab. The new process will be used for all future cavities to improve margins and increase performances.

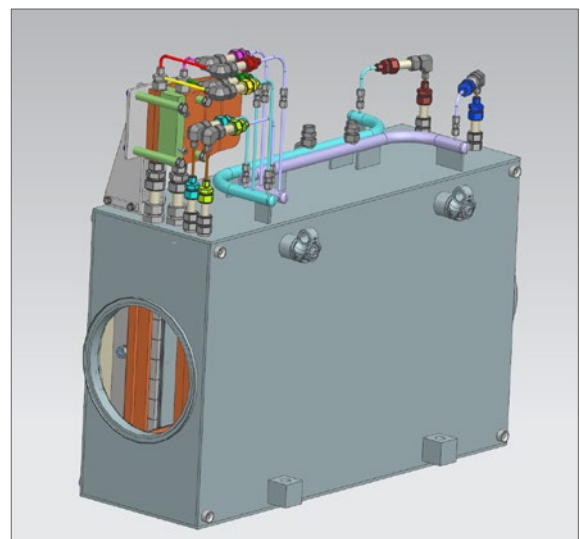
The cavity, after thorough rinsing with ultra-pure water, will then go back to Zanon in Italy for a high-pressure rinse and high temperature heat treatment.



Pre-production SSR2 cavity in the rotational BCP at IJCLab. Photos courtesy of IJCLab.

ORBUMP magnets complete Final Design Review

The final design review for the PIP-II Booster 800-MeV Injection ORBUMP magnets has been completed. Along with other components and Booster modifications, ORBUMP magnets are required to integrate the new PIP-II superconducting linac into the Fermilab Accelerator Complex. Four ORBUMP magnets will be installed in the new Booster injection straight section, Long 11, which will allow the beam from the PIP-II Linac to be injected into Booster. They will be pulsed to 20,000 Amps for a single millisecond 20 times each second.



3D model of the magnet with the vacuum flange, power input flags, and cooling lines.