Abstract Submitted
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Investigation of Nitrogen Diffusion into SRF Niobium with High Temperature Heat Treatment[1] NII-BOI QUARTEY, None — Nitrogen doping in niobium SRF cavities is conducted by heating the cavities at high temperatures inside of a furnace in the presence of nitrogen. Depending on the temperature and nitrogen concentration, complex nitride forms on the surface of the cavity. Electropolishing is conducted to remove the unwanted nitride from the cavity surface, leaving behind some diffused nitrogen. The temperature dependence of nitrogen diffusion profile on niobium is calculated and compared with existin experimental data. The activation energy for nitrogen diffusion on niobium is extracted and compared to previously reported literature results. The activation energy varies slightly with respect to the different data set shows that the diffusion environment and niobium surface may play a role in nitrogen diffusion.

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None

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