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(54) Title: SELECTIVE CHEMICAL FREQUENCY MODIFICATION OF JOSEPHSON JUNCTION RESONATORS

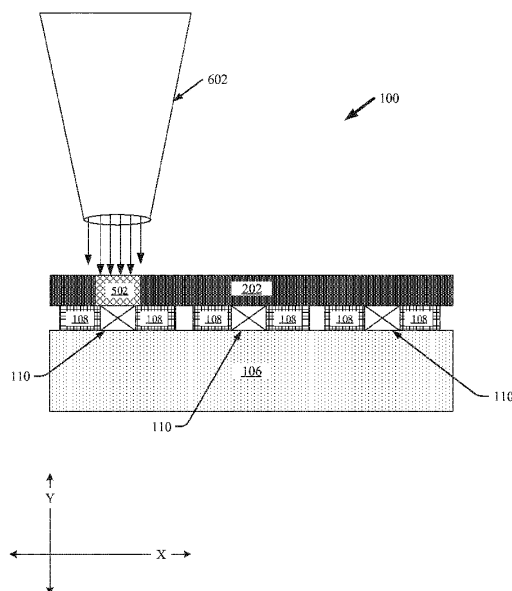


FIG. 6

(57) Abstract: Techniques for selectively tuning the operating frequency of superconducting Josephson junction resonators are provided which include chemically altering a Josephson junction (110) via a plasma treatment, preferably by masked exposure of a transmon qubit die (104) to plasma (502) including reactants such as hydrogen or oxygen. In particular, the plasma treatment adjusts an electrical resistance of the Josephson junction. An apparatus for carrying out the plasma treatment is also disclosed.

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