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(54) Title: PRE-SCREENING AND TUNING HETEROJUNCTIONS FOR TOPOLOGICAL QUANTUM COMPUTER

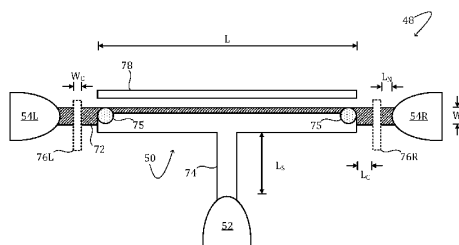


FIG. 5

(57) Abstract: A method to evaluate a semiconductor-superconductor heterojunction for use in a qubit register of a topological quantum computer includes measuring a radio-frequency (RF) junction admittance of the semiconductor-superconductor heterojunction to obtain mapping data; finding by analysis of the mapping data one or more regions of a parameter space consistent with an unbroken topological phase of the semiconductor-superconductor heterojunction; measuring a sub-RF conductance including a non-local conductance of the semiconductor-superconductor heterojunction in each of the one or more regions of the parameter space, to obtain refinement data; and finding by analysis of the refinement data a boundary of the unbroken topological phase in the parameter space and a topological gap of the semiconductor-superconductor heterojunction for at least one of the one or more regions of the parameter space.

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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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