INRiM
ISTITUTO NAZIONALE
DI RICERCA METROLOGICA

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JTWPA Fabrication

Planning Sept-Dec 2022

Emanuele ENRICO

Planning

- Fabrication of the third generation JTWPAs prototypes currently in progress at INRiM
  - JJ_Reproducibility_TestArray
    - 3x oxidation parameters **12/09/2022 -> 30/09/2022** -> Rn (UniMib) **01/10/2022 ->14/10/2022**
  - RPM_Resonator_TestArray **01/10/2022 ->14/10/2022 (Fabrication) - 15/10/2022 ->30/10/2022 (RT Test)**
    - Lumped LC
    - Spiral resonators

- Third generation prototype characterizations in-house (INRiM) and the the INFN labs (LE, LNF, SA)) **01/11/2022 -> 15/11/2022**
  - TWJPA_X_RPM_DielectricLess
    - *TWJPA_X_RPM_DielectricLess_2*
      - rough impedance matching
      - RPM values
      - Slotline modes
  - TWJPA_C_RPM_DielectricLess
    - *TWJPA_C_RPM_DielectricLess_2*
      - rough impedance matching
      - RPM values
      - Slotline modes

- Fine tuning of the fabrication parameters and startup of the fourth generation of JTWPAs with optimized cell (Josephson inductance replaces geometrical one for compactness)) **01 December 2022 -> 15 December 2022**
  - TWJPA_X_RPM_DielectricLess
    - *TWJPA_X_RPM_DielectricLess_3*
      - improved impedance matching
      - fine tuned RPM values
  - TWJPA_C_RPM_DielectricLess
    - *TWJPA_C_RPM_DielectricLess_3*
      - improved impedance matching
      - fine tuned RPM values