

Photocathodes for Rossendorf SRF gun

Rossendorf SRF gun is an electron source based on superconducting RF technology but use normal conducting photocathode. Cs₂Te is chosen as the standard photocathode. Up to now 34 Cs₂Te photocathodes have been prepared and eight of them have been operated in the SRF gun. One cathode provides more than 35 Coulomb in 1000 hours. On the other hand, the SRF gun is a good test bench of various cathodes for SRF environment.

Now the activities in our cathode laboratory are guided to new photocathode materials with high Q.E. for high current electron sources. Cs₃Sb and GaN(Cs) photocathodes have been tested as new candidates, and the design of a preparation system for GaAs(Cs, O) is ongoing. The first GaAs photocathode is planned in one year.

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