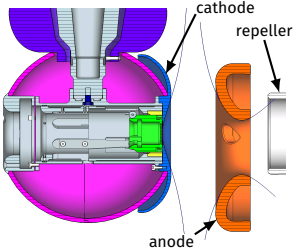
LD2601 FY26 Q1 report: A high-intensity, polarized-beam prototype photogun for the Ce⁺BAF positron source — Objectives and progress

New gun electrodes "R30-5":

- ME design complete except for anode standoff



- Achieved good mechanical compatibility with existing parts and vacuum chamber
- Machine shop about to start fabrication, all tasks on track

Simulation studies of final performance:

- Improved ion-rejection design with extra repeller electrode
- Tracking simulations with truncated laser profile, no loss in performance
- Verified low-voltage operation to mitigate risk

No remaining problems found

Details in: M. Bruker, C. Hernández-García: "Electrostatic design and engineering considerations for the R30-5 gun", JLAB-TN-26-007 (parts close to publishable)

Lifetime measurements at GTS:

- 780 nm laser installed
- Beam time delayed by laser safety certification but starting next week (no impact on overall schedule)

Q2 objectives:

- Complete lifetime measurements with R30-2 gun (conventional reference)
- Prep chamber modifications (photocathodes, activation mask, gate valve)
- Electrode fabrication and assembly

Research conducted under the Laboratory Directed Research and Development Program at Thomas Jefferson National Accelerator Facility for the U.S. Department of Energy

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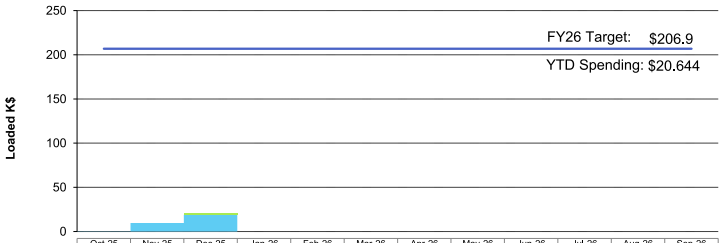
Labor:

- Mostly PI and ME design, on track
- Machine shop jobs about to start

Upcoming procurements (Jan):

- Vacuum hardware for prep chamber ($20k)
- Raw materials for machine shop ($5k)



	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26
YTD Spending	0.309	9.600	20.644	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pending	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Open Obligations	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Expenses	0.000	0.000	1.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Labor	0.309	9.600	19.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Funding	206.9	206.9	206.9	206.9	206.9	206.9	206.9	206.9	206.9	206.9	206.9	206.9

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