

Photonic Band Gap Accelerating Structures Progress Report

1Q FY17

In the first quarter of FY17 the postdoc (Janardan Upadhyay) completed the mechanical drawings of the PBG structure for high gradient testing at LANL. The drawings were reviewed and approved by SLAC's personnel. The purchase order was submitted to start fabrication. The lead time for fabrication is 55 days. Fabrication will be followed by brazing of the structure and testing at SLAC.

An accelerating test with a high gradient PBG structure is also considered at the NLCTA facility at SLAC. The postdoc started the electromagnetic design of the structure for the accelerating test.

Preparations are on the way for the wakefield experiment at Argonne Wakefield Accelerator (AWA). The spectrometer for the energy measurements is delivered to AWA. The new Be window is ordered to reduce the scattering of the high charge electron beam. The delivery date for the window is in February, 2017. The start of the wakefield experiments is planned for the second quarter of FY17.

The postdoc attended the North American Particle Accelerator Conference in Chicago, IL and presented a poster on his work.

1. Janardan Upadhyay and Evgenya I. Simakov, *Update on RF Breakdown and Wakefield Experiment of Photonic Band Gap Accelerating Structure*, 2016 North American Particle Accelerator Conference (NAPAC'16), October 10-14, 2016, p. WEPOA51.