

Group Project – Travis Rettke EC601

Project Goal:

Create a 1in. x 1in. Grover Coin for use in Dr. Alexander Sergienko's laboratory to support his and his PhD students' research.

The ultimate goal of the project is longer term than EC601 with significantly more features than will be able to be completed in one semester, therefore, for the sake of EC601 the goal is a Grover Coin using planar mirrors that is not phase adjustable or capable of coupling with optical fiber. However, extensive research will be completed on case materials and optical components used.

Target Users:

The target users are Dr. Alexander Sergienko and his PhD students. They are researchers in the field of photonics, meaning they require robust, sensitive tools that introduce minimal error to a system.

User Stories:

As a scientific researcher, I require tools that introduce minimal error into my system.

As a scientific researcher, I require tools that complete very specific tasks very well.

As a scientific researcher, I can utilize tools that require they be handled with care and used very carefully.

As a scientific researcher, tool performance is more important than costs. However, I would like to save money where reasonable.

As an optical researcher, I require tools that do not melt when directed energy is applied to them.

As an optical researcher, I require tools that minimize light scattering to enhance eye safety.

Minimally Viable Product (MVP)

Seeing as the scope of this project extends beyond EC601 into follow on semesters, the goal of a Grover Coin that utilizes planar mirrors, is not adjustable, and cannot couple with fiber is the MVP.

Plan for Sprint 2

The main goal for sprint 2 is to get oriented with Dr. Sergienko's lab group and get up to speed with Chris Schwarze, the Ph.D. student who was working on this idea initially before it was passed to me. After I get up to speed with Chris I plan to begin familiarizing myself with what is available on the market that can help me create this project; specifically, 3D printing materials and micro optics components.