Polishing Protocol for Zirconium Diboride Based Ceramics to Be Implemented into Optical Systems

UA ID Technology #ua18-057

Title: Polishing Protocol for Zirconium Diboride Based Ceramics to be Implemented into Optical Systems

Invention: This is a method for polishing a particularly hard ceramic that typically requires following a precise protocol. This technology provides an athermal, lightweight and strong ceramic to be used as a more durable option for optical systems.

Background: A key component of adaptive optical systems is the deformable mirror, which, through the use of actuators, corrects aberrations present in the wavefront being examined. The search for the perfect material for the mirror has led to materials that present difficulties in polishing.

Applications:

- Deformable mirrors
- Biomedical materials
- High temperature semiconductor devices
- Synchrotron optical elements
- Lightweight, high-strength structures
- Adaptive optics
- Hypersonic rocket nose cones

Advantages:

- Allows optical systems to be athermal, lightweight, and strong
- Polishes material to high standards without stressing the material

Licensing Manager:

Amy Phillips

Contact: Amy Phillips
Sr. Licensing Manager

amyp@tle.arizona.edu
(520) 621-9579
AmyP@tla.arizona.edu

Refer to case number UA18-057

**Inventors**

**Joseph Rice**
Undergraduate Student, Optical Sciences

**Michael Hart**
Astronomer, Steward Observatory

**Dae Wook Kim**
Assistant Professor, Optical Sciences

The University of Arizona, Tucson, Arizona