

# Zinc Selenide Optical Fibers



200  $\mu\text{m}$

MRSEC researchers have fabricated the first optical Fibers made from zinc selenide, using a high-pressure Chemical deposition technique invented in the MRSEC. Optical fibers are a cornerstone of modern science and technology, yet remain fundamentally limited by the types of materials from which they can be made. With these new ZnSe fibers, it is now possible to exploit the materials properties of crystalline compound semiconductors: these materials are the basic blocks of modern opto-electronics, with abilities to generate, manipulate, and otherwise transform light far more versatile and powerful than those of typical glass fiber materials. New types of fiber lasers and frequency converters may now be possible. Such lasers could have applications in areas ranging from remote chemical sensing to laser-based surgery.