

GLASS

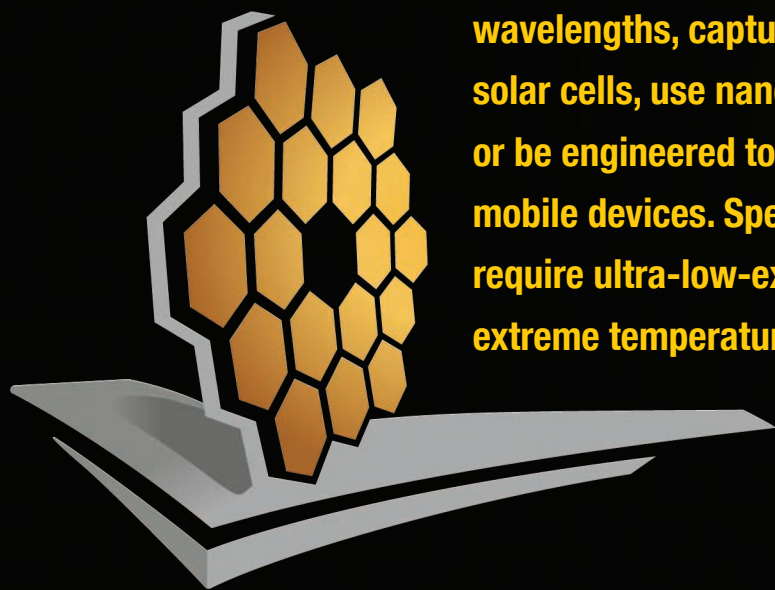
A transformative material with an essential role in technology, science, culture, and more, glass has been used by humankind for thousands of years for decorative and functional objects.

Glass is the material used to create hair-thin fiber optics used to transfer information around the world or within a data center. Pulses of light through glass fiber can transmit bits of information over 125,000 miles per second with flexible cables that are safer, lighter, and faster than electrical wire, with greater bandwidth and less energy consumption.

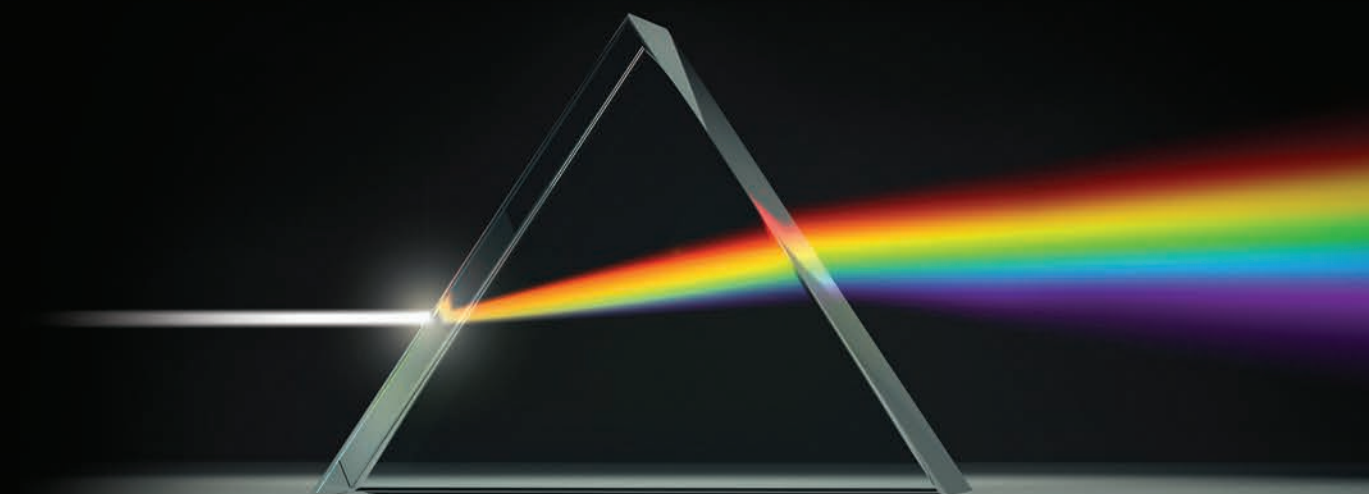


Precisely shaped glass lenses are used within cameras, telescopes, and microscopes that let us see our world, the smallest or most distant objects, and—using the right sensor—visualize the invisible.

Advanced glass can filter specific wavelengths, capture more photons in solar cells, use nanotextures to be ultra-transparent, or be engineered to be strong and touch-sensitive on mobile devices. Specialty applications in astronomy require ultra-low-expansion glass that can withstand extreme temperature ranges experienced in space.



Glass can be melted and reused, making it one of the most recyclable materials. It has a variety of roles in reducing greenhouse gas emissions such as energy-saving coatings and triple glazing, silicon-based photovoltaic cells, and glass fibers that strengthen wind turbine blades.



In optical systems, glass is widely used because of its ability to refract, reflect, and transmit light, following the principles of geometrical optics.

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