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## Acrofusion Makes SolChar Incinerator Possible

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**Acrofusion makes SolChar Incinerator possible.**  
*Acrolite fiber optic solution able to transmit light energy required to create biological charcoal.*

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**The Challenge**  
It is shocking that in this day and age, approximately 42% of the world's population lacks access to basic sanitation facilities, and that many of those people resort to open defecation. Each year an estimated 700,000 children die unnecessarily from diseases related to poor sanitation.

Through the use of solar power, this toilet operates off the grid with no piped water, and treats human waste on-site to make char—an odorless product chemically identical to charcoal, which can be used for fuel or soil amendment.

The university's project required the implementation of custom light transmission to control solar energy consistently, efficiently, and simply. Acrolite supplied fiber optic bundles, which were used with great success.

**The Science**  
Solar tracking is necessary to achieve high concentrations of energy and reactor temperatures. Therefore, a sensor detects changes in the sun's position every 10 to 40 seconds and signals the drive motors to adjust accordingly. Parabolic dishes direct the sunlight to a small focal point; this light is then delivered to fiber optic bundles located at the focus of parabolic concentrators. The fiber optic cables are fed to the reaction compartment of the Sol-Char, where the various individual cables are terminated at an outlet positioned over the waste collection container.

**Acrofusion**  
Through a proprietary process, Acrolite has developed a solution for transmitting up to 20% more light through fiber optic cables than industry standards. We call this process Acrofusion™ and it's only from Acrolite. This process can also withstand higher temperatures, making Acrofusion™ the only capable fiber optic solution for the SolChar project.

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