

# Guiding light in the right direction

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LED's are the most commonly used sources of light for illumination. Due to the diffuse nature of light directing the light bundle to where you need the most light is a challenge. Turning the lamp in a desired direction is not always possible – when a lamp is attached to a ceiling – or would always suffice when you need all light in an exact spot such as in a car's headlights. The researcher is designing an optical system for illumination that can direct light into any desired location. Optical surfaces such as free form mirrors and lenses can be used to direct light. The researchers is focused on developing a numerical model that can compute the shape of the needed optical surface so that it can give the desired light focus or distribution. The advantages of directing light in this way are that light pollution can be avoided and energy can be saved.



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## What's next?

The described research started approximately 10 years ago and has matured to the level that our methods are transformed into an industrial simulation code which can be applied in production.

