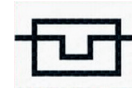


# NEW TYPE OF COMPOUND REFRACTIVE LENSES AND METHOD FOR THEIR PRODUCTION



## CUTTING EDGE TECHNOLOGY

A new type of compound refractive lenses (CRL) designed for collimation or focusing of X-rays and a method for their production using an innovative nano-machining technology with a monocrystalline diamond tool.

Using this method high shape accuracy can be achieved, whether it is a parabolic, ellipsoidal, Cartesian oval or aspherical refractive lens. The advantage of this technology is that in one technological step it is possible to produce the entire array of X-ray lenses, e.g. 20 pieces in a row, to create the CRL. This eliminates the need to adjust individual lenses in a row to the common optical axis.

## COMPETITIVE ADVANTAGE

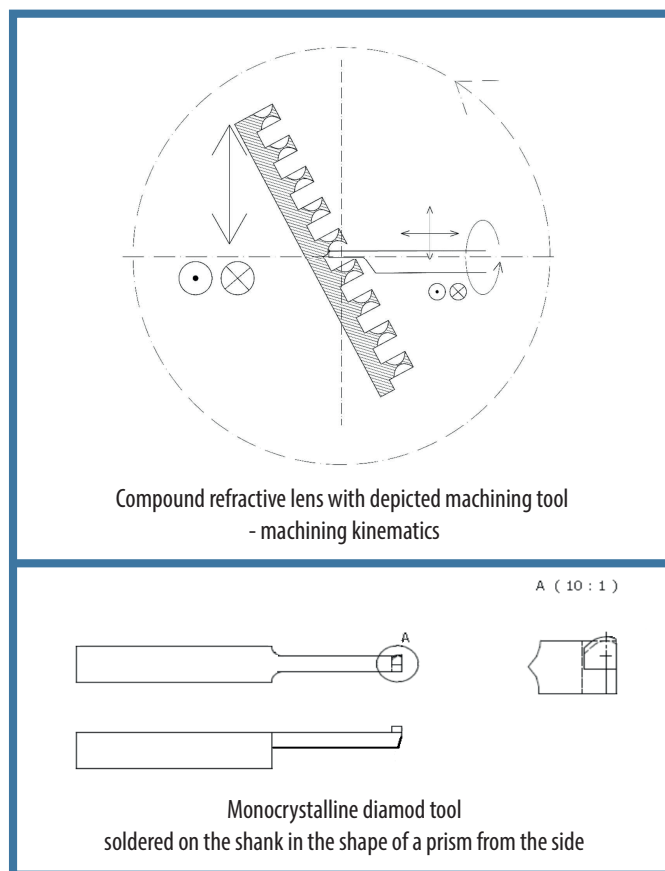
- possibility of manufacturing of the entire array of lenses in one technological process,
- possibility of manufacturing not only cylindrical but also 3D surfaces,
- relatively short manufacturing time,
- achievement of high shape accuracy, low surface roughness and minimal subsurface defects of the active surfaces of refractive lenses.

## STAGE OF DEVELOPMENT & PROTECTION

- TRL 3 - analytical and experimental critical function and/or characteristic proof of concept,
- priority SK patent application (PP 50014-2021).

## INDUSTRIAL APPLICABILITY

The primary use of X-ray refractive lenses and compound X-ray refractive lenses is focusing or collimation of X-rays. Compound refractive lenses are currently used mainly on synchrotrons to focus X-rays. Focused X-rays can be used for example for structural analysis of various materials or for submicron resolution imaging, such as micro-tomography, ptychography, high-resolution crystallography, high-resolution coherent diffraction imaging, and others.



WE ARE LOOKING FOR A PARTNER FOR FURTHER  
DEVELOPMENT AND LICENSING THE TECHNOLOGY.

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