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Focusing Systems for X-ray Micro Beam: an Overview

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This work reviews the most used optical systems for X-ray microprobes and summarizes the experiences in research with synchrotron radiation as well as with X-ray tube generators.

The need for smaller beam spot sizes for various applications and the unique properties of X-rays have induced a remarkable and fast development in X-ray optical systems. These systems are divided into four main categories: diffractive, reflective, refractive and absorbing. Examples of the first three will be covered in this work, highlighting the properties that allow having spot sizes down to sub-micrometer regime.

However, the extraordinary capabilities of such systems are always relative. Therefore, an overview of the techniques that use such optical systems will be given, emphasizing their applicability on several case studies.

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