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Non-mechanical ultrafast tunable X-Ray optics (X-Ray acoustic elements and bending crystals): advantages and possibilities.

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My report focuses on the proposal, development and successful testing of the controlled elements for X-ray optics based on the lithium niobate crystals structures. Using such elements allows to achieve a scanning range of hundreds of angular seconds, even at low supply voltage. In addition, experiments that demonstrate the absence of hysteresis in such elements were performed. In this case it gives us a reason to use it as controlled X-ray optics element with the ability to precisely control the angular displacement. It is important to note that the bending elements based on lithium niobate crystals are characterized by very small values of rearrangement time, which will allow using X-Ray optics elements based on them for fast experimentation, such as using in synchrotron beam stations.

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