Tool for 3-D Scanner
- Fast 2-D scanner and varifocal lens made of KTN -

**Motivation**

◆ KTN (potassium tantalate niobate: KTa$_{1-x}$Nb$_x$O$_{3}$) is a most promising material thanks to its high dielectric constant and significant electro-optic properties. One of our targets is to develop a 3-dimensional scanner.

**Originality**

◆ Both a 2-dimensional scanner and a varifocal lens have a faster than MHz response.
◆ The 2-dimensional scanner is capable of large angle, low-voltage beam scanning. The varifocal lens can change its focal length quickly.

**Impact**

◆ These results will be applied, for example, to 3-dimensional measurement, and a laser scanning display.

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**Varifocal lens**

◆ Simple structure of KTN chip and electrodes
◆ Focal length movement is controlled by applied voltage

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**3-D measurement device**

◆ 3-dimensional scanner using KTN varifocal lens and 2-dimensional KTN optical scanner

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