

Lateral axis MEMS gyroscope with vertical sensing comb

Zhenchuan Yang

z.yang@ime.pku.edu.cn

Institute of Microelectronics , Peking University

MEMS Research Center at Peking Univ. has conducted researches on MEMS gyroscopes for more than 10 years. In recent years, we are focusing on lateral axis MEMS gyroscopes which can work at atmospheric environments. The basic idea is to use area-changing vertical sensing comb capacitors instead of gap-changing parallel plate capacitors to sense out-of-plane motions. The vertical sensing comb capacitors have better linearity and low air damping, then can work without vacuum packaging. The fabrication process of the lateral axis gyroscopes is fully compatible with our standard process for z-axis gyroscope, which make it potential to realized low cost monolithic inertial measurement units (MIMU).