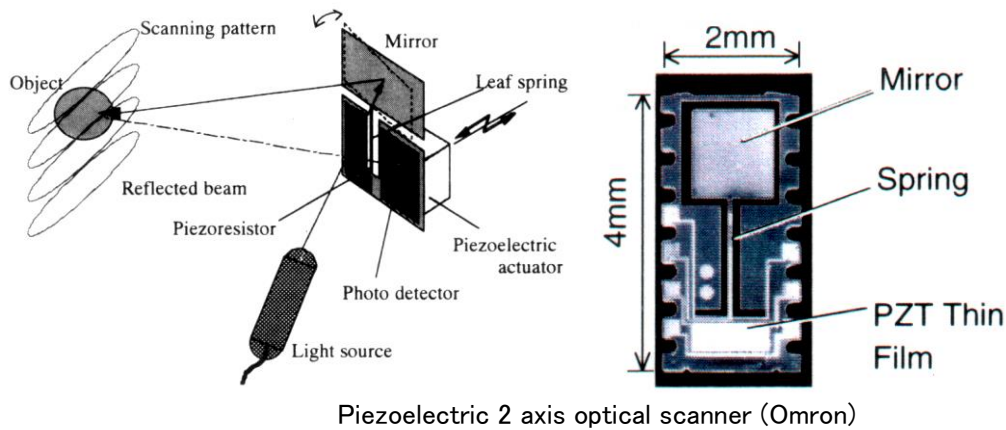
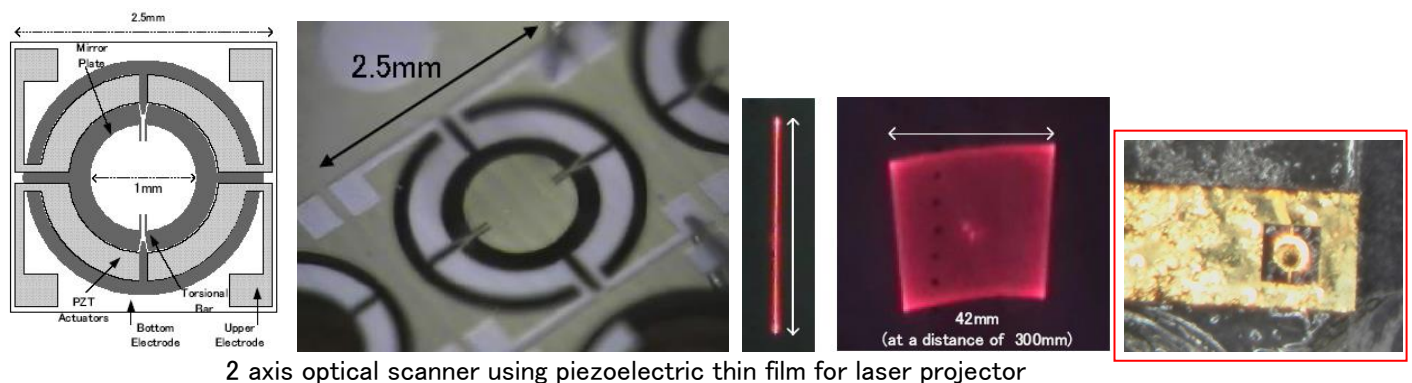


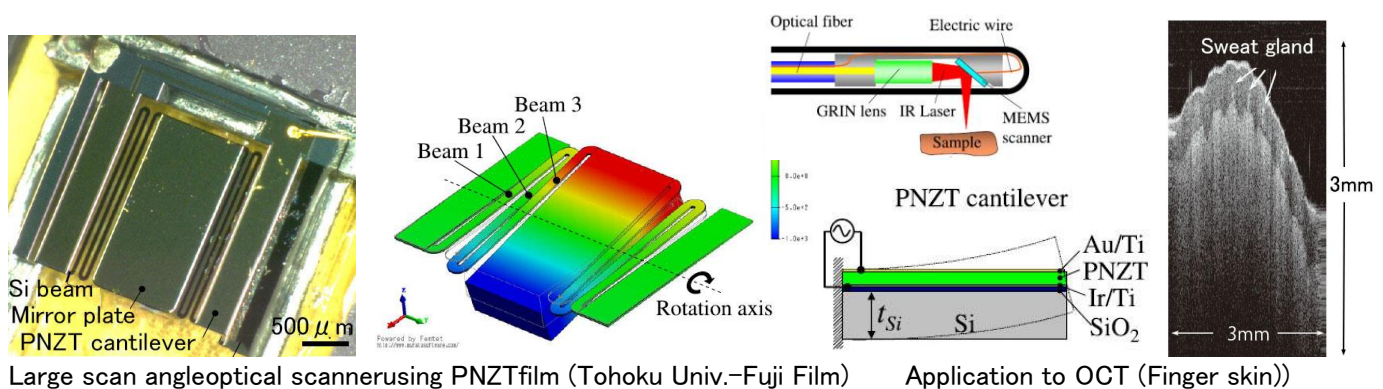
11 Piezoelectric and electrostatic optical scanners



Reference : T.Kawabata, M.Ikeda, H.Goto, M.Matsumoto and T.Yada, The 2-Dimensional Micro Scanner Integrated with PZT Thin Film Actuator, Transducers' 97 (1997) pp.339-342

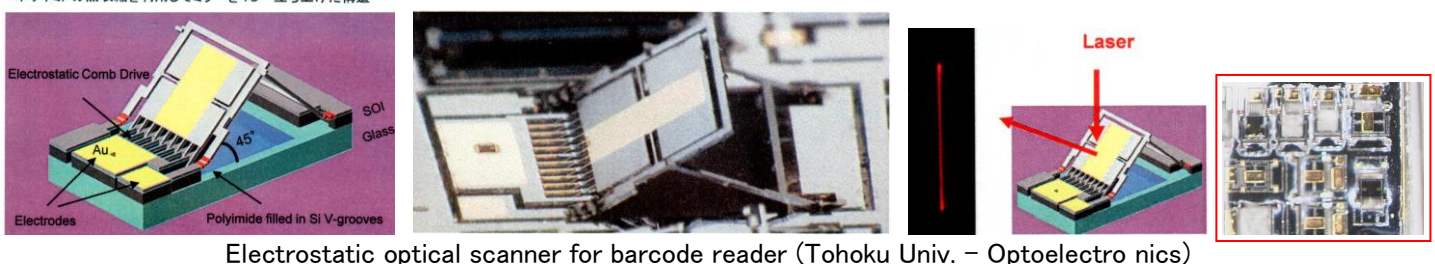


Reference : H.Matsuo, Y.Kawai and M.Esashi, Novel Design for Optical Scanner with Piezoelectric Film Deposited by Metal Organic Chemical Vapor Deposition, Jap. J. Appl. Phys., 49, 6 (2010) 04DL19



Reference : T.Naono, T.Fujii, M.Esashi and S.Tanaka, Large Scan Angle Piezoelectric MEMS Optical Scanner Actuated by Nb Doped PZT Thin Film, J. Micromech. Microeng. 24, 1 (2014) 015010(12)

ポリイミドの熱収縮を利用してミラーを45° 立ち上げた構造

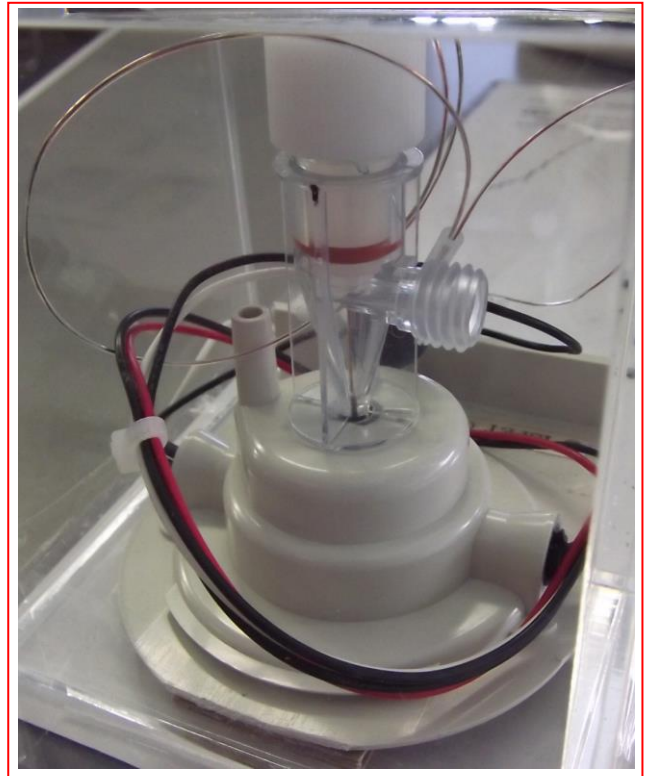


12 Immunological analyzer of Helicobacter pylori's urease

モノクローナル抗体で*H.pylori*ウレアーゼのみを検出

Helicotac

ピロリ菌ウレアーゼ測定器 ヘリコタック PYL-1100

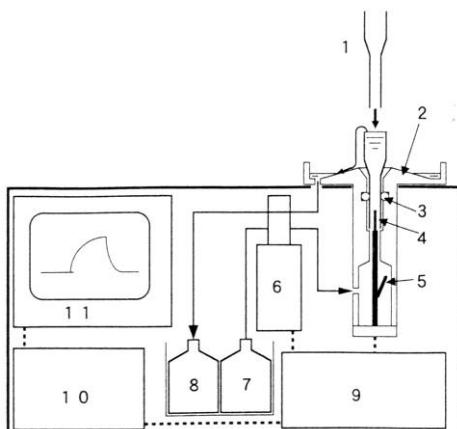
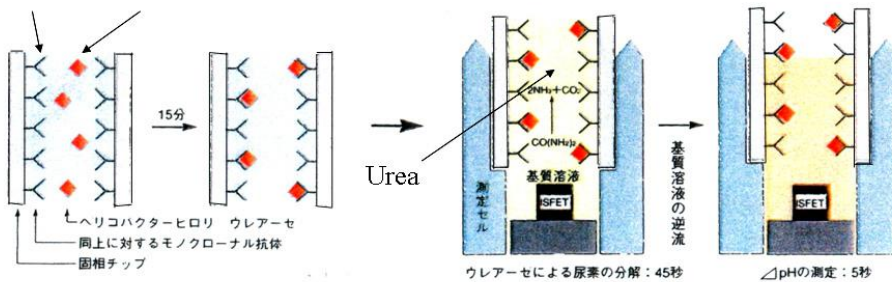


PYL-1100は、胃粘液中のヘリコバクターピロリ (*H.pylori*) ウレアーゼをモノクローナル抗体により吸着させ、当社独自のpHセンサにより免疫学的に検出します。
検体溶液と固相チップの免疫反応から*H.pylori*の存在を示す Δ pHを得るまで、約20分と迅速です。

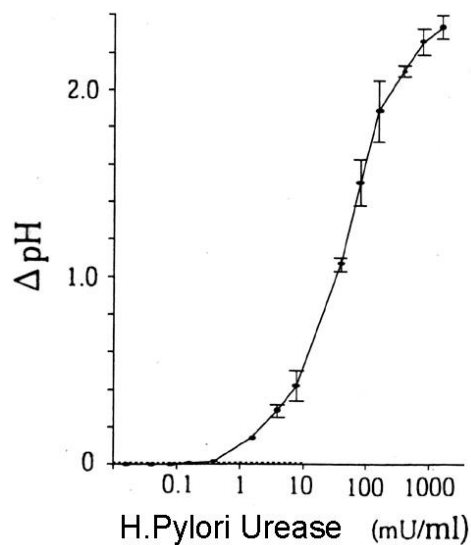
Immuno-reaction

Antibody *H.pylori*

Measurement of enzyme (urease) activity of *H.pylori* : pH change by ammonia (reaction product) is measured using the ISFET



The block diagram of the present system. 1, solid-phase capillary tube; 2, pH-measuring cell; 3, o-ring; 4, pH-FET; 5, reference electrode; 6, pelista pump; 7, bottle of substrate solution; 8, bottle for waste solution; 9, electronic circuit for operating pH-FET and for controlling pump; 10, CPU; 11, display.



Reference : Y.Kohli, T.Kato, S.Ito, H.Miyazi, T.Azuma, K.Nagata, H.Tsuruta, S.Matsui, K.Oka and M.Nakamura, Diagnostic System for Helicobacter pylori Urease Based on a pH-sensitive Field Effect Transistor, Digestive Endoscopy, 7 (1995) pp.27-34