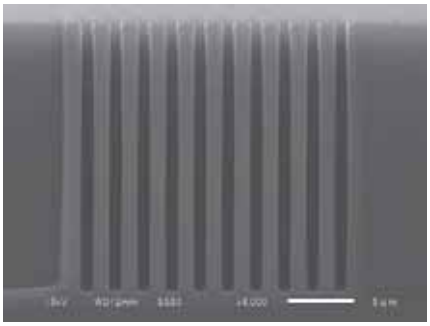
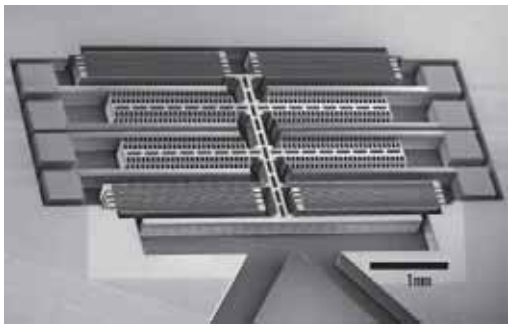
Current achievements

v102 (2009.09)

(1) Si deep etching process

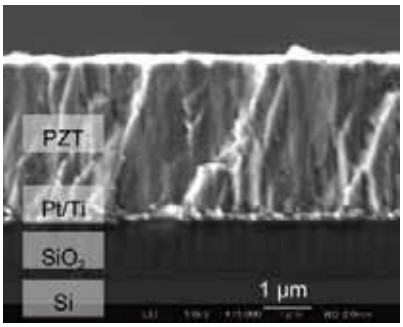


Cross section view of Si
by a DeepRIE etcher (ASE-Pegasus)

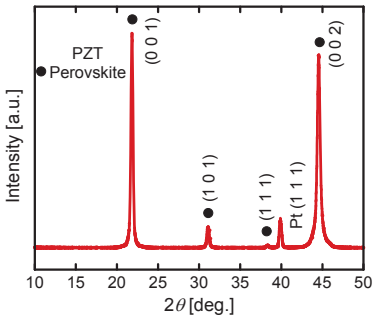


Comb structured
electrostatic actuator

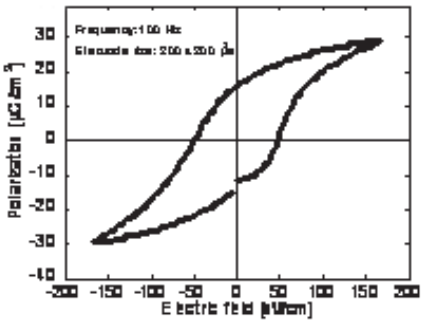
(2) PZT piezoelectric thin films processing for a fusion with Si process



Cross section view of
spattered PZT

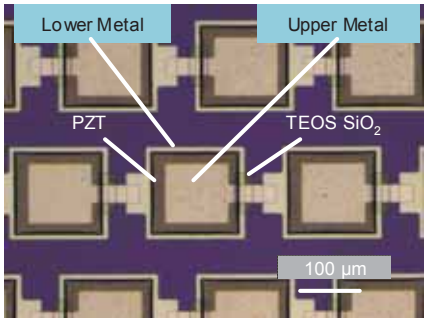


XDM of sputtered PZT(perovskite)

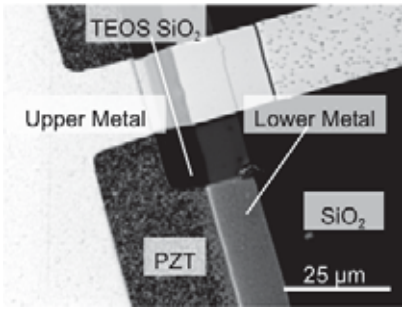


P-E hysteresis loop

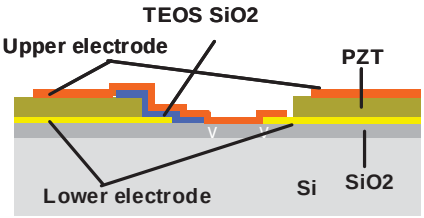
(Pr:~14,16 μC/cm2,Ec:±50 kV/cm,d31： ~80 pC/N)



Cascade connected PZT device

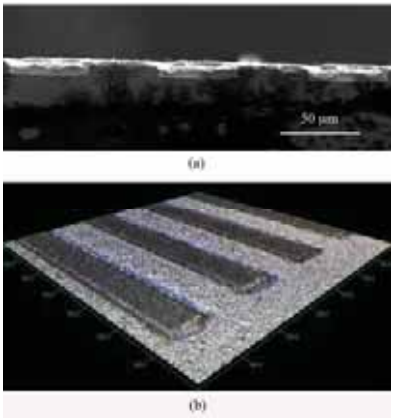


wiring over PZT step (Upper Metal)

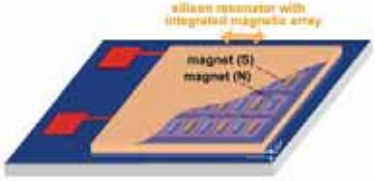


a schematic diagram

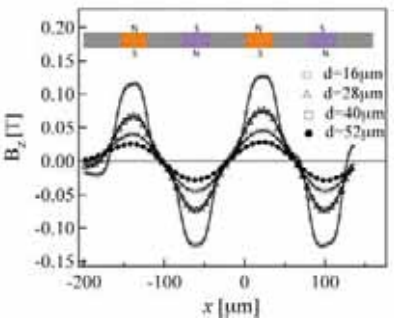
(3) NdFeB magnetic thin films processing for a fusion with Si process



patterned NdFeB films
by polishing

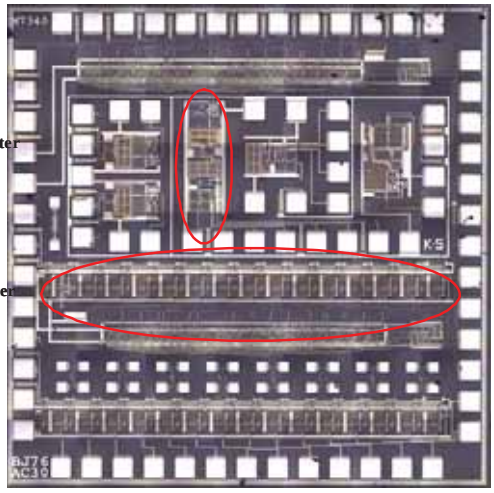


a schematic diagram of
an electro-magnetic power generator

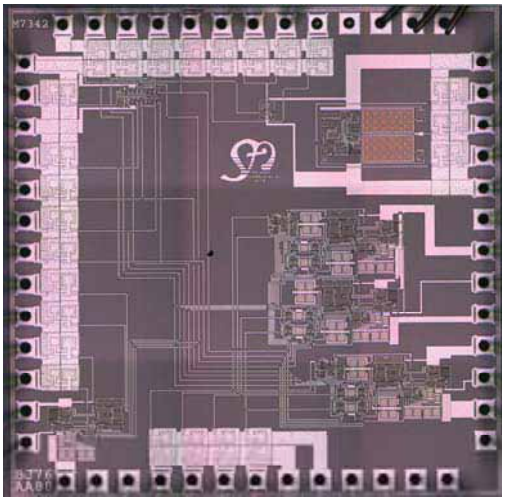


simulated magnetic
flux density

(4) mixed-analog/digital signal processor

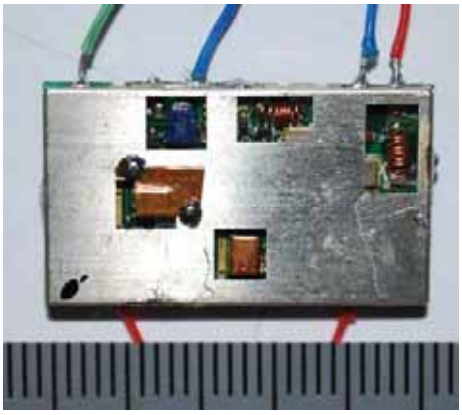


CV converter and AD converter

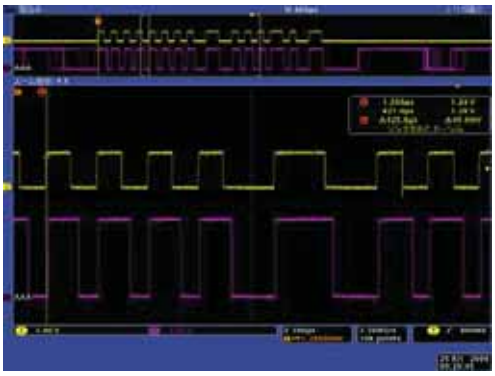


ΔΣ modulated AD converter

(5) RF circuit

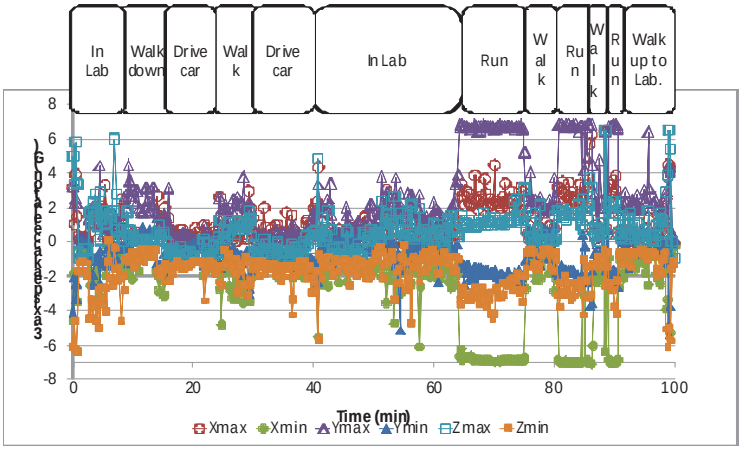


RF module built up by discrete transistors
(315MHz)



transmitting signal : yellow line
receiving signal : red line

(6) Examination of a system concept by using a large model prototype



Large model prototype and a measurement example of human body activity