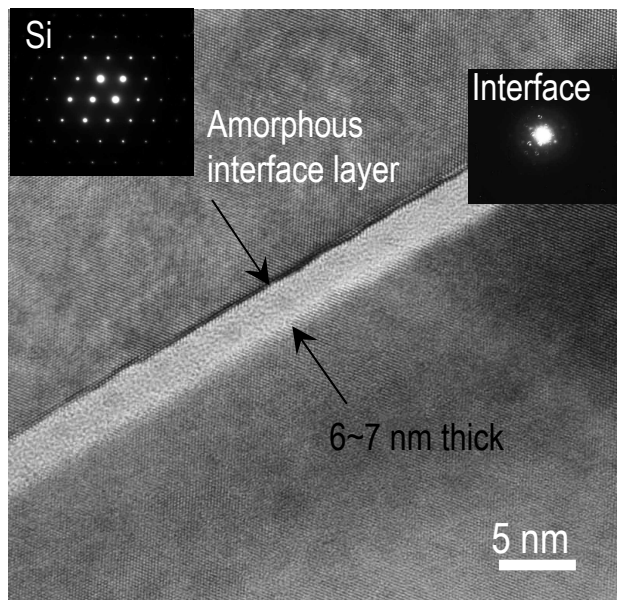
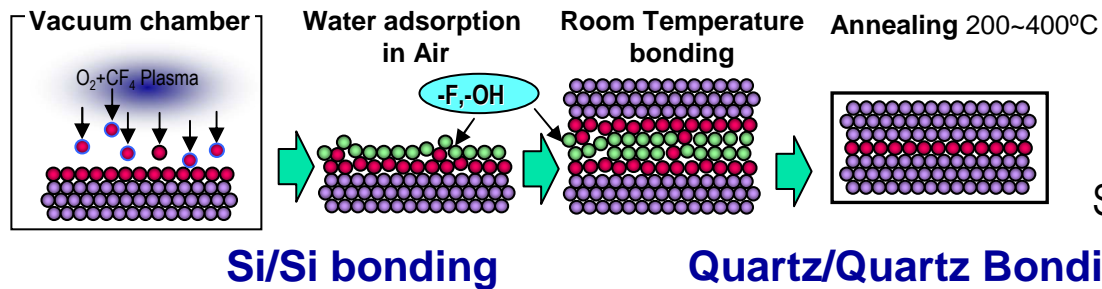


# Development of Low-Temperature Bonding Method and Application to Micro/Nano Chemical Systems

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A new method is developed for low-temperature bonding which requires no thermal treatment on the bonding process. The method is useful for integration and packaging of micro/nano chemical systems for realizing novel chemical devices as well as MEMS/NEMS devices.

## Surface activated bonding (SAB) method for low temperature bonding



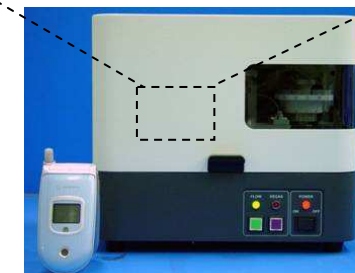
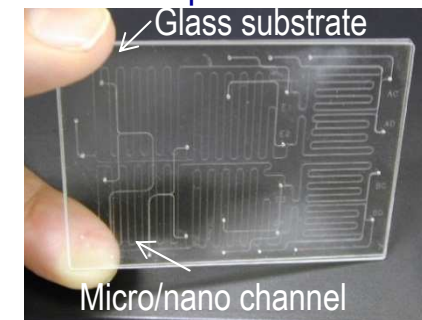
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M. M. R. Howlader, S. Suehara, T. Suga,  
Sensors and Actuators A 127 (2006) 31–36

SAB method

Micro/nano chemical system  
(Laboratory on a chip)

Microchemical chip = chemical device



Basic science in micro/nano space  
Applications (medical, energy, etc.)

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T. Tsukahara et al., *Chem. Soc. Rev.*, 39, 1000 (2010).  
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