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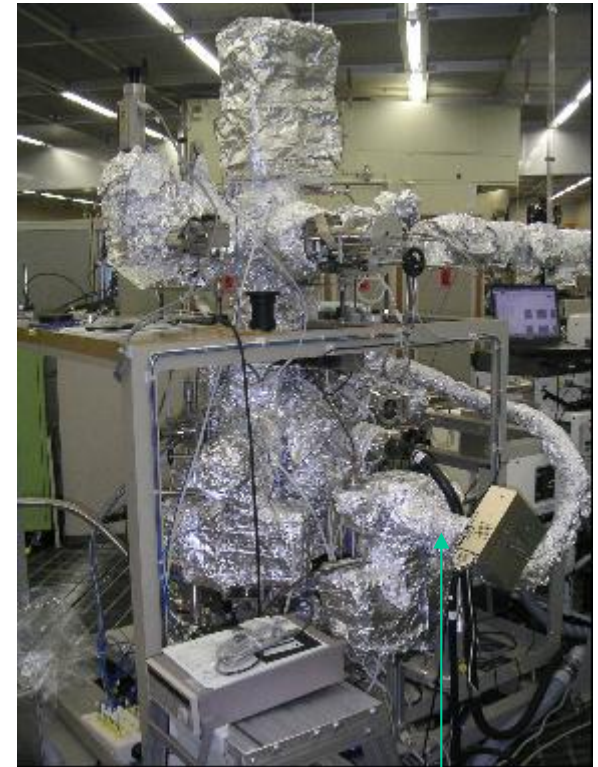
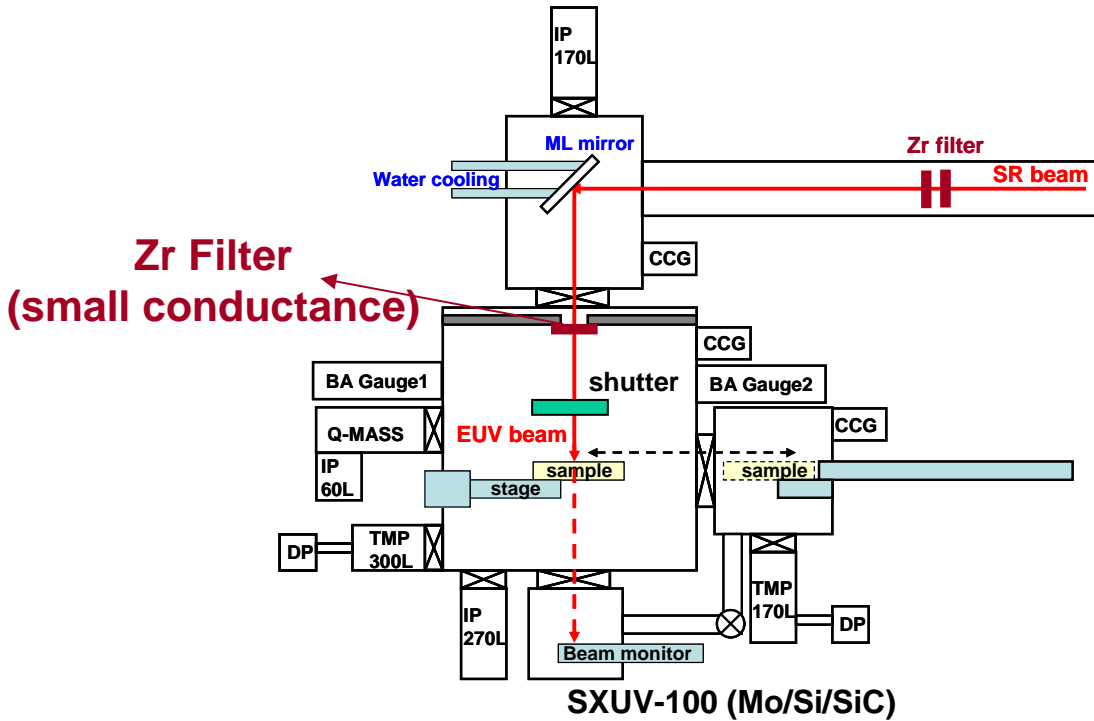
# Status of ASET-Outgassing evaluation

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**This work was supported by NEDO.**

# ASET-Outgassing evaluation apparatus



Back pressure:  $<1 \times 10^{-7}$  Pa (just after baking)  
 Back pressure:  $2-9 \times 10^{-7}$  Pa (in resist film)

EUV intensity:  $0.1 \sim 1$  mW/cm<sup>2</sup>@250mA

Exposed area: 1 cm x 2 cm

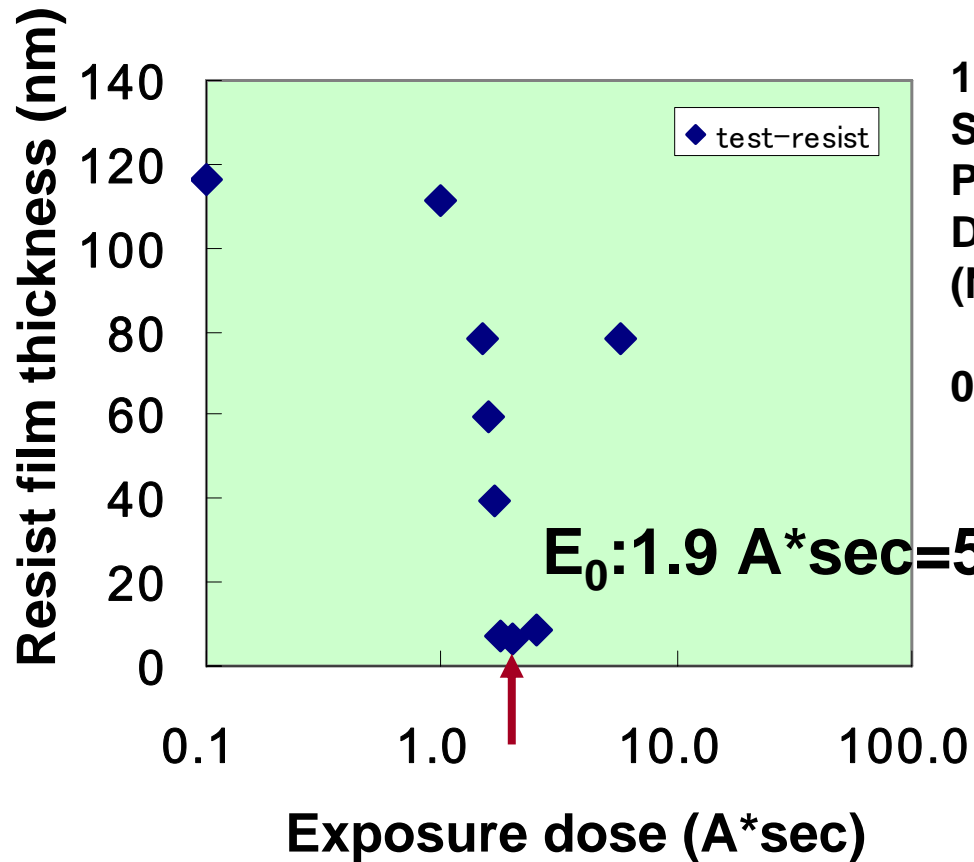
Q-MASS: M-QA200TS (ANELVA)  
 60sec@1-200 amu scan

# Progress of ASET-Outgassing evaluation apparatus

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- 2005/3**      **Installed**
- 2005/4**      **Adjustments**
- 2005/5-6**    **Preliminary experiments**
- 2004/7**      **Adaptation (Beam monitor, Filter, Orifice)**
- 2005/8-9**    **Adjustments**
- 2005/10-**    **Round robin outgassing**  
**Preliminary results**

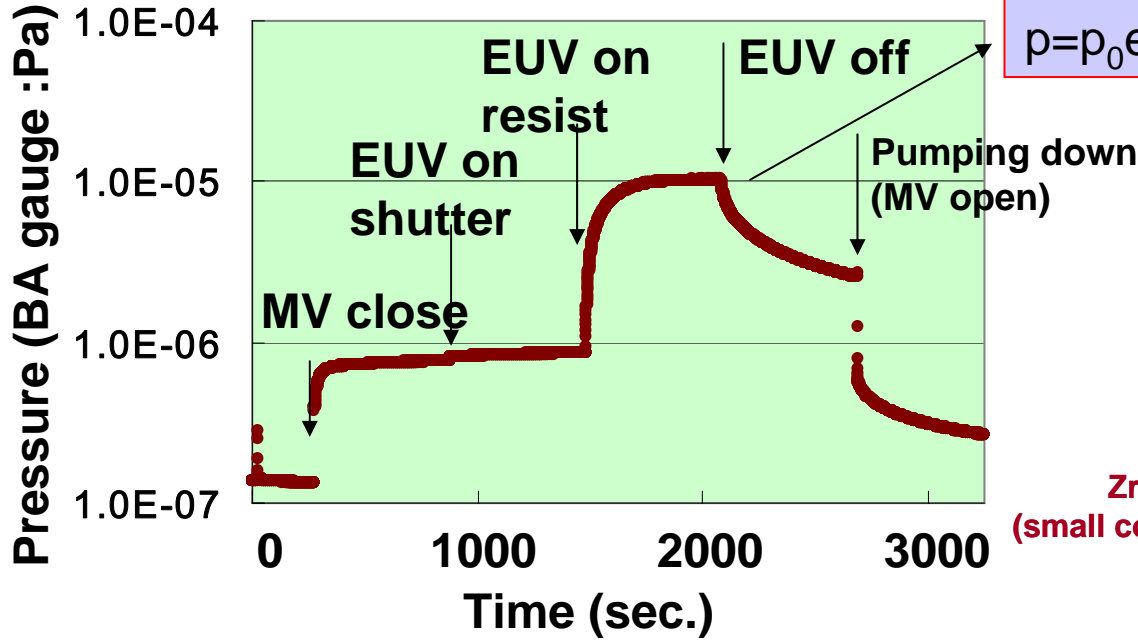
# Ezero evaluation



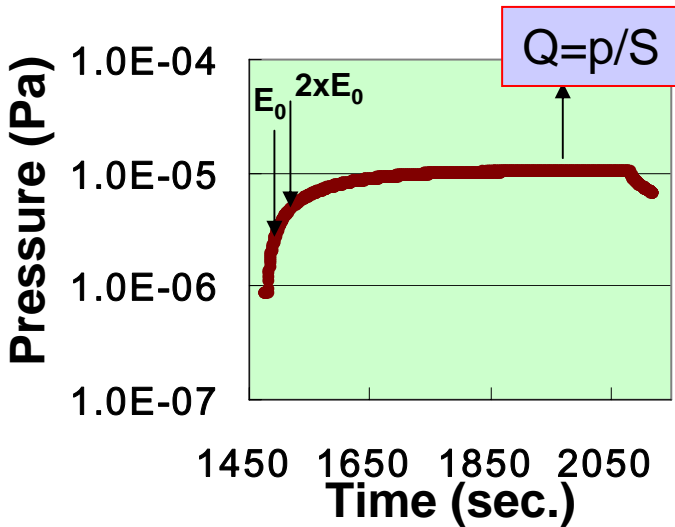
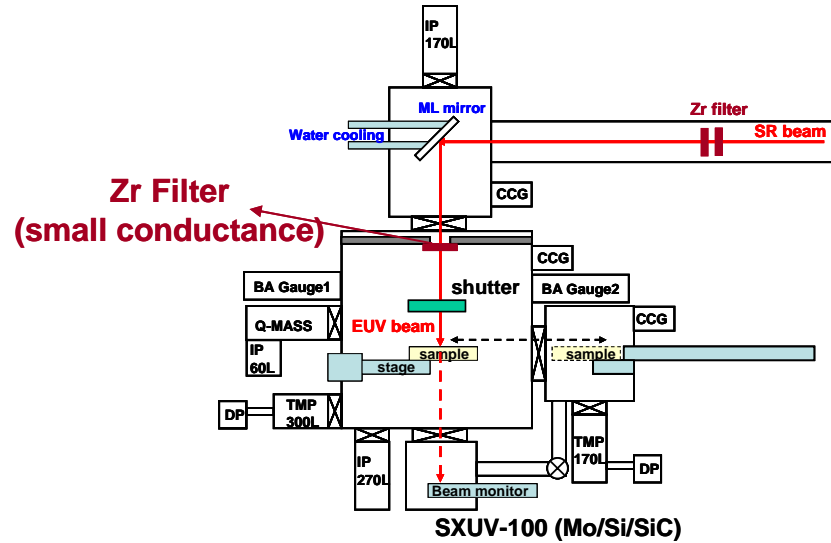
125 nm thickness  
Softbake: 140° C for 60 seconds  
Postbake: 130° C for 90 seconds  
Development: use 0.26N TMAH  
(NMD-3 2.38%) for 40 seconds

0.5 mW/cm<sup>2</sup>@250mA

# Preliminary outgassing evaluation



0.21 mW/cm<sup>2</sup> @ 234mA  
Exposed area: 2cm<sup>2</sup>

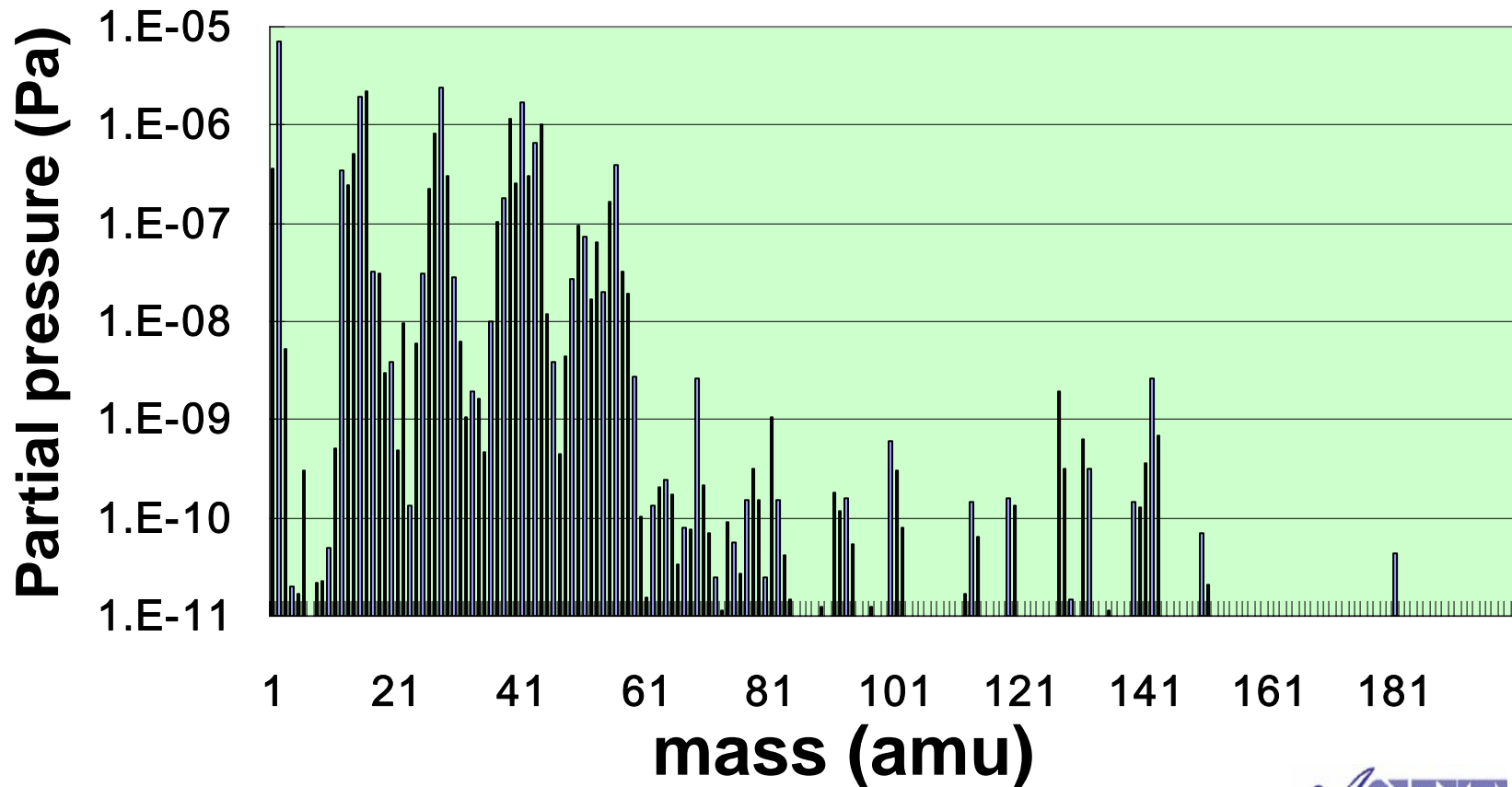


**Q:  $2.4 \times 10^{11}$  molecules/cm<sup>2</sup>/sec at 0.21 mW/cm<sup>2</sup> in stationary state**

**Q:  $2.2 \times 10^{14}$  molecules/cm<sup>2</sup>/sec at 200 mW/cm<sup>2</sup> in HVM (simply estimation)**

# Q-MASS analysis 1

Q-MASS: M-QA200TS (ANELVA)  
60sec@1-200 amu scan  
10 scans average  
0.67mW/cm<sup>2</sup>@241mA  
Exposed area:2cm<sup>2</sup>



# Q-MASS analysis 2

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	H,H <sub>2</sub>	H <sub>1-2</sub> O	CO <sub>2</sub>	C <sub>4</sub> H <sub>7-10</sub>	C <sub>6</sub> H <sub>5-6</sub>	12-43amu	*>43amu	C <sub>x</sub> F <sub>y</sub>	SO <sub>x</sub>	IH,I
Pa	7.4E-06	7.0E-08	1.0E-06	6.2E-07	4.7E-10	1.4E-05	2.3E-07	1.0E-07	1.3E-09	2.3E-09
ratio	3.2E-01	3.0E-03	4.4E-02	2.7E-02	2.0E-05	5.9E-01	1.0E-02	4.6E-03	5.7E-05	9.9E-05

\*except C<sub>4</sub>H<sub>7-10</sub>, C<sub>6</sub>H<sub>5-6</sub>, C<sub>x</sub>F<sub>y</sub>, SO<sub>x</sub>, IH,I