## **Reliability Characteristics of Ti/Au Micro-Cantilever by** Long-Term Vibration Test

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DL:  $l \uparrow \rightarrow \Delta h_{tip} \downarrow$ 10<sup>5</sup> slightly < 10<sup>7</sup>

 $\Delta \boldsymbol{h}_{ave}$ 

DL3+12>DL10+15

/ SL>>DL

<mark>∕</mark> 10<sup>5</sup> ≈ 10<sup>7</sup>

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ave

Įm

0

1000



7

5

3

1

-1

\_3

200

400

Acknowledgement

600

Length/µm

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800

Deflection,

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4

2

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/µm

1000

DL10+1

400

600

Length/µm

800

Ah

Deflection,

<u>e</u>

5

3

1

-3

2.00

Conclusions The DL Ti/Au structure demonstrated positive effect on long-term structure stability of the micro-cantilever.

deformation

the substrate

parallel to

No fracture

surface

200 µm

The tip deflection changed only ~ 1 µm for 1000 µm long DL10+15 after 107 cycles of the vibration.