New solution for Online Probe Needle Cleaning

Peter Binkhoff
ELMOS Semiconductor AG

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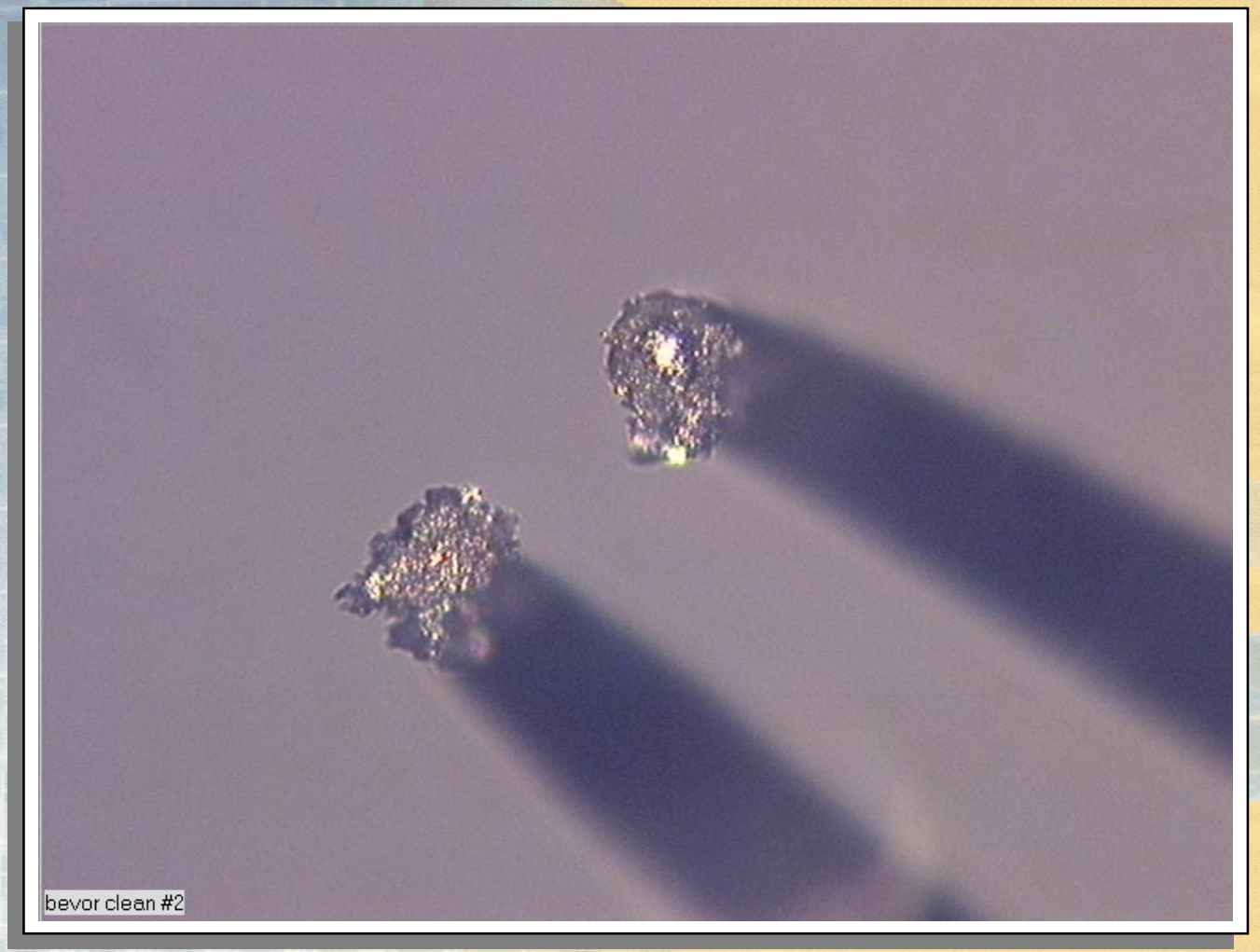
Have you seen this before ?

Bond pad debris on probe needle tips



What does this mean for wafer sort ?

US$ 45,000 losses p.a. per prober

Production stops for 1 h

1000 ICs are not tested

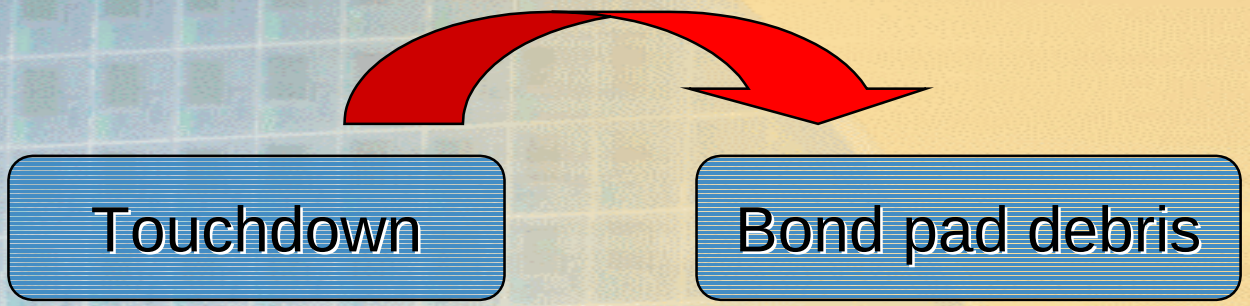
Every Day

Every Year

The annual costs of this event are approx. 45,000 US $ per Waferprober

What has happened and what does it mean?

Strong influences of AlSi and Al_2O_3 debris on measurement and probe needle lifetime



- Increased contact resistance
- Possible wrong measurements
- Abrasive Al_2O_3 particles on the probe needle tip

What are the current cleaning solutions ?

The most effective probe needle cleaning method is cleaning with an abrasive pad

- Brush or an ultrasonic bath
  > bad for online cleaning
- Chemical etching
  > bad for online cleaning.
- Abrasive pad
  > online cleaning possible

  But each cleaning cycle reduces the needle lifetime!

When you think of abrasive cleaning

Abrasive cleaning reduces the probe needle lifetime

Would you cut off your feet if they are dirty?

It could be so easy!

An adhesive doormat takes the dust of your shoes

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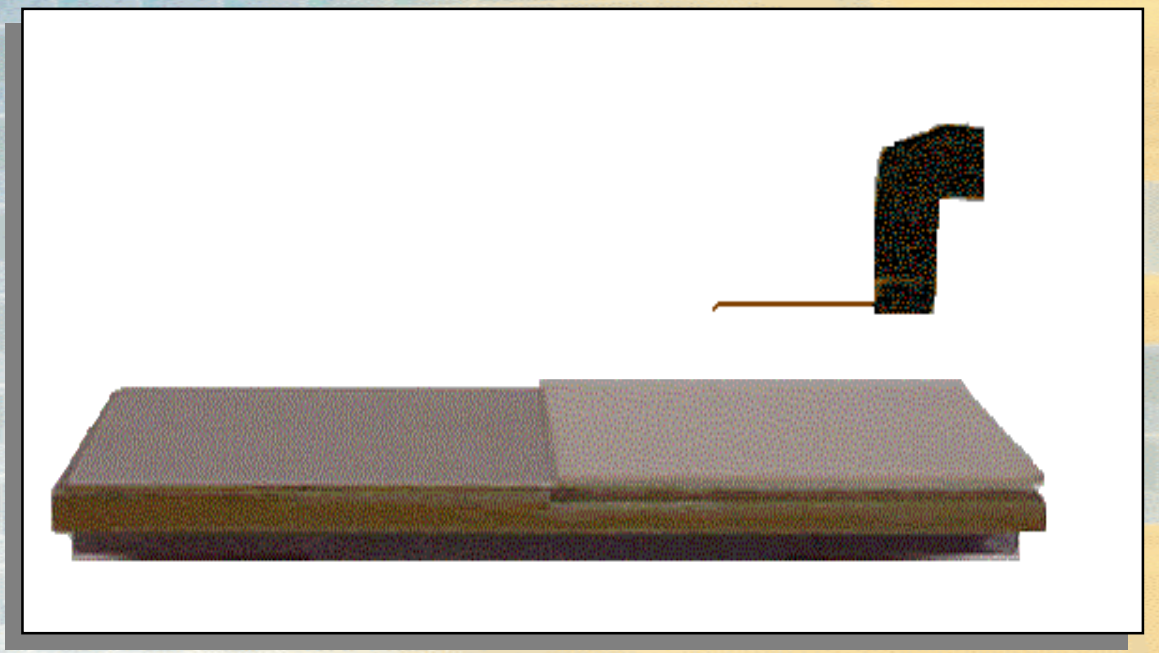
The adhesive doormat for probe needles...

ElmoClean™: An elastomer substrate with high adhesion

ElmoClean™



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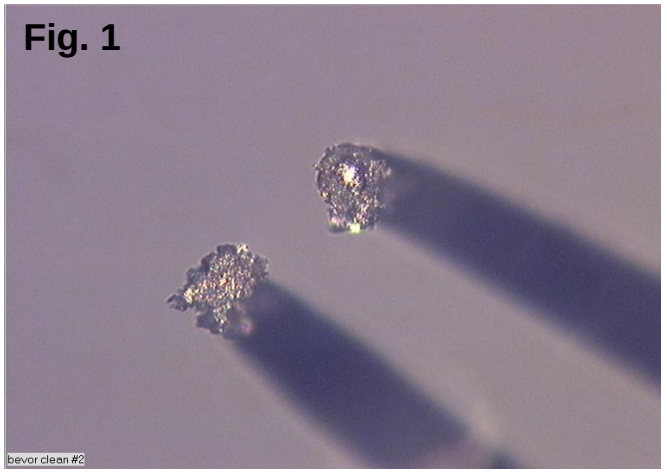
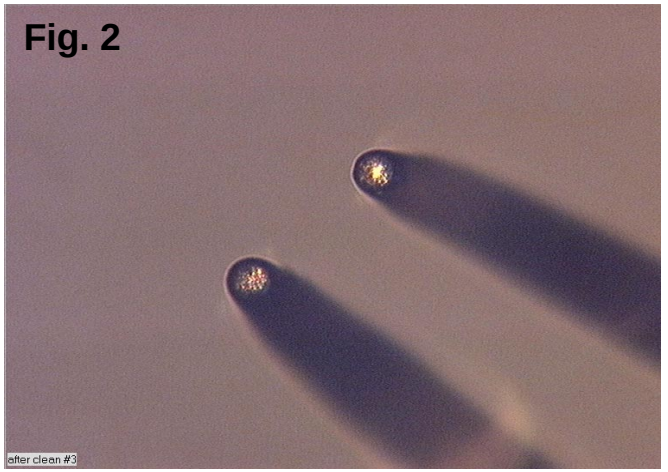
The future of probe needle cleaning...

... is non abrasive!





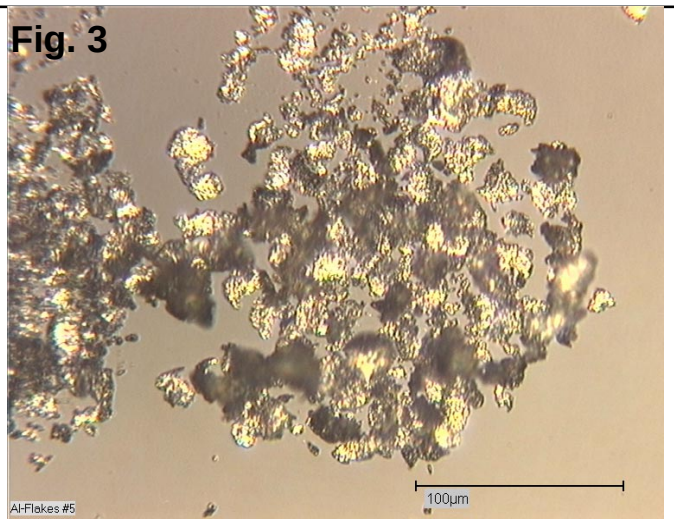


Fig. 1:
Probe needles with adhering bond pad debris after 50.000 TDs

Fig. 2:
Probe needles after a single touchdown on ElmoClean™

Fig. 3:
The bond pad debris is now adhering to the ElmoClean™

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The benefits of continuous probe needle cleaning with ElmoClean™

Save (Life)Time

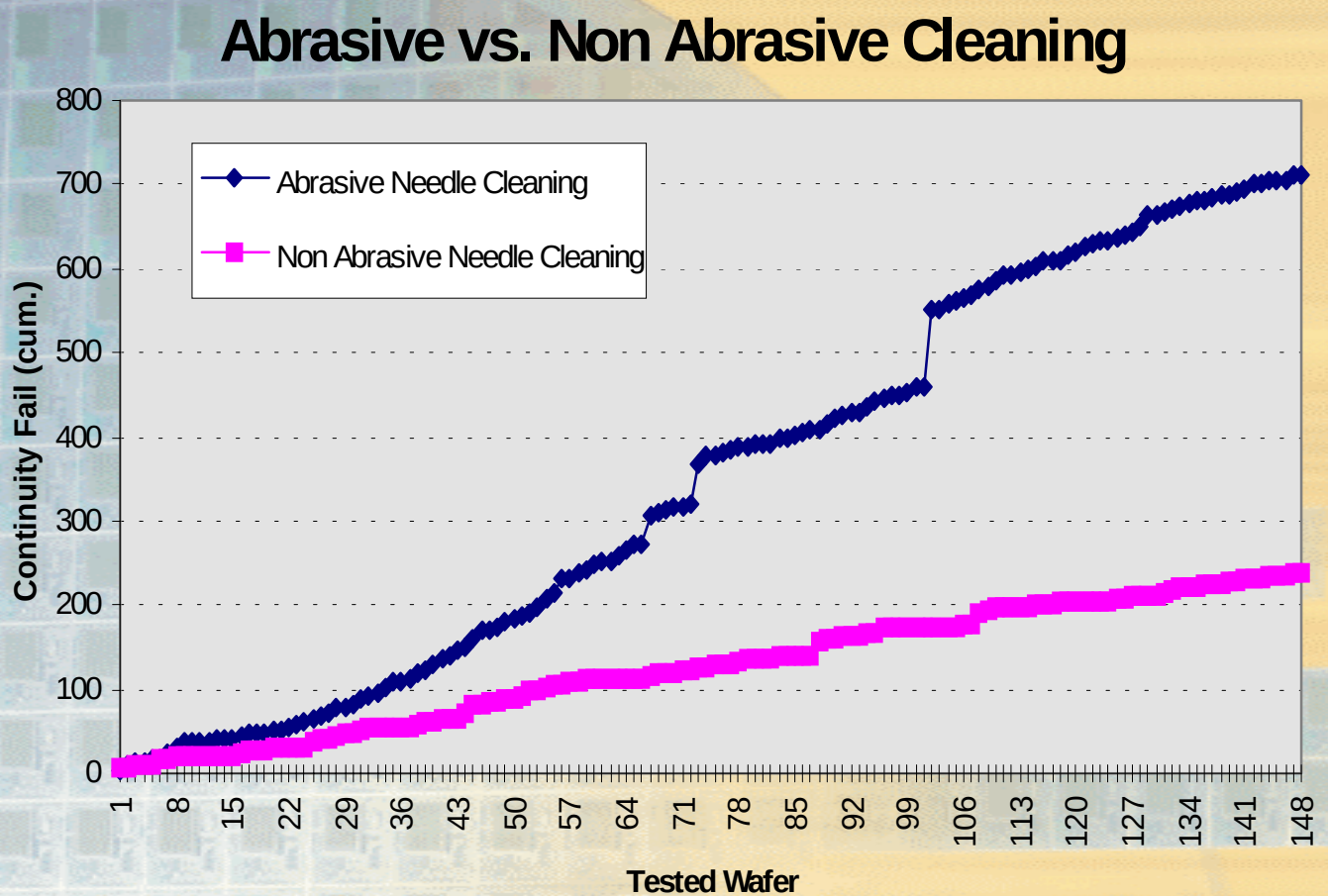
Save Money

- Increases productivity
- Reduces failures
- Offers online maintenance
- Increases probe needle lifetime
- Avoids “punch through” of bond pads

All without residues from the elastomer!

Reducing probing related failures

Abrasive cleaning generates 3 times more fails



Cumulative total number of continuity failures after testing of 149 wafers or 130.000 touchdowns with abrasive and non abrasive cleaning.

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Avoiding “punched through” bond pads

Increases product quality

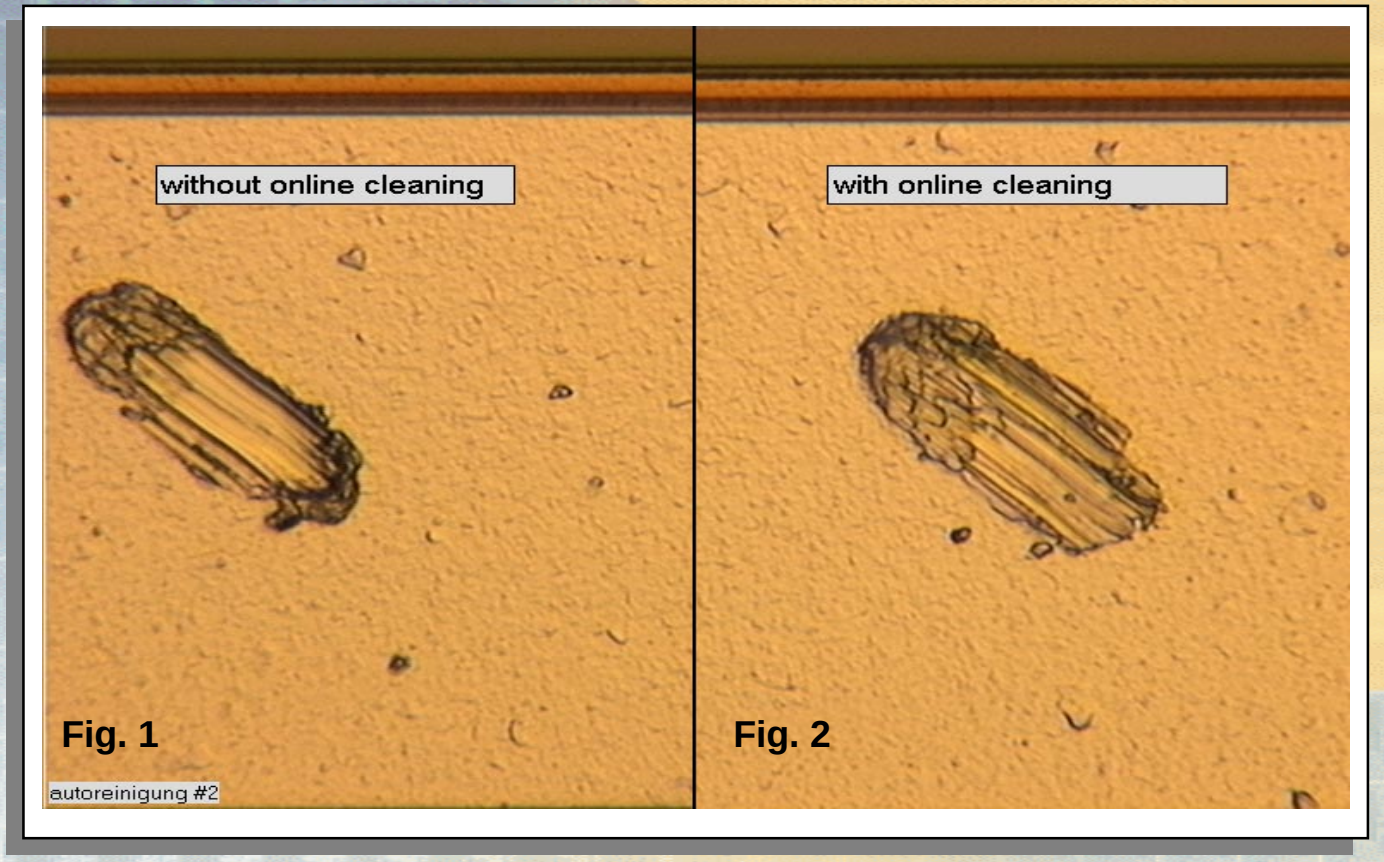

Fig. 1: AlSi and Al_2O_3 deposit on the probe needle causes a deep scrub

Fig. 2: The same probe mark after online needle cleaning with **ElmoClean™**

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Potential savings using ElmoClean™

Savings for a single waferprober 5000 US$ per month

800.000 tested ICs

400.000 TDs per probe card

0.2% yield loss

30 hours production stop

About 40% less maintenance

5000 US $ per month for each waferprober !

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