



NanoGalax
Tools for Nanotechnology

Nanogalax, Ltd.

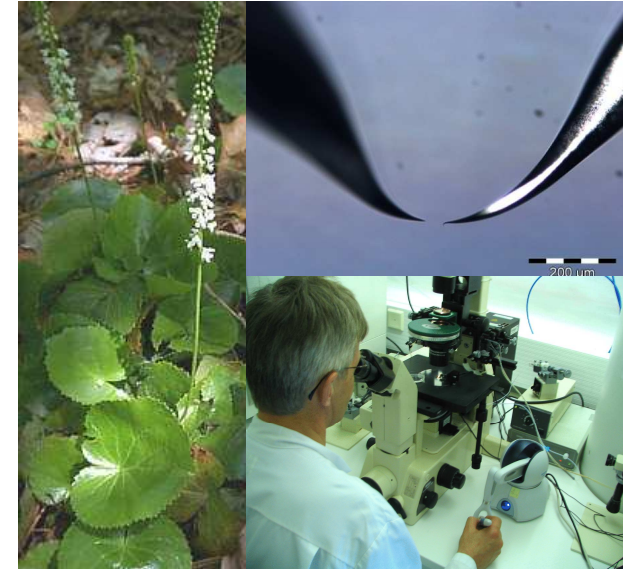
Berlin 1.10.2009

Marko Pudas



Small scale – High accuracy

- Founded in 2007, as an result of TNT (Tools for Nanotechnology) project
- Offices in Espoo and Oulu, Finland
- To develop, manufacture, market and service advanced tools for micro- and nanoscale research and production needs in life-science, process industry and research organisation field.
- Global approach
- Extensive research network within university community
- Consultancy and Measurement services



The GalaxFamily™

- Close to 100 man months research altogether
- Micro-/ nanoscale research instruments
- Examples
 - cell adhesion
 - quality inspection / development
 - low- adhesion measurement
 - drug development
 - fibre adhesion analysis (life-science and pulp&paper)
 - biofilm analysis
 - 3D-patterning and measurements (lithography)
- In general:
3D, easy-to-use, price competitive, high resolution instruments
- Solutions to improve production methods

GalaxCell™

Cell Adhesion
Analyzer

GalaxFlaw™

Nanocrack Finder

GalaxStick™

Nanostick
Organizer

GalaxTester™

Surface adhesion

GalaxCharge™

Static Surface
Charge Analyzer

GalaxFilm™

Biofilm Analyzer

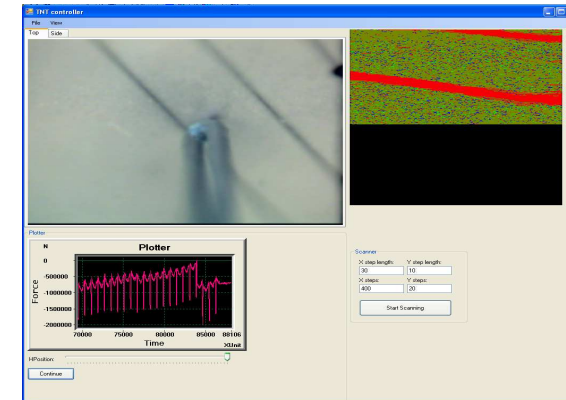
GalaxFiber™

Fiber Analyzer

A selective pick from the **GalaxFamily™**

GalaxFlaw™

- Cracks often appears on the surface of nanocoated materials that can not be detected without destroying the sample
- 3D picture of the surface
- Does not destroy the sample
- Measurement in NRT conditions in liquids
- Typical:
 - Resolution 50 nm/axis
 - Max. movement 5 mm in all axis
 - Max. speed 500 $\mu\text{m/s}$



- 3D Manipulation and measurement of synthesized materials
- Micro- and nano scale objects, MEMS
 - mechanical probing
 - 1-D force measurement $<1 \text{ nN} - >1 \text{ N}$
- Cellular manipulation
 - Cell penetration
 - Recombination-protein production
- Real time view of manipulation
- Large work area

GalaxStick™

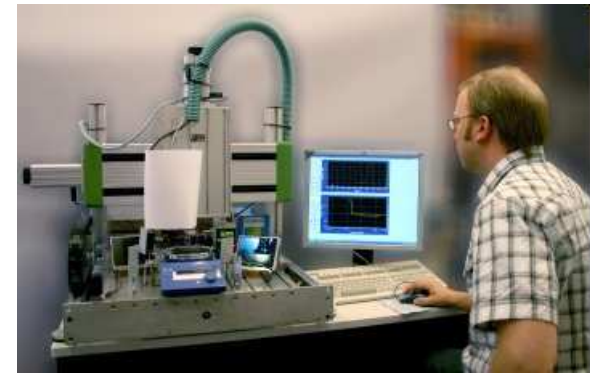


10-20 μm long, 250nm wide polymer sticks being manipulated



- **Measures contact adhesion between substrate and sample**
- **Can measure on hot surfaces (up to 200°C)**
- **Some fields of use:**
 - **Quantification of non-sticking**
 - **Paper chemicals adhesion (impurities)**
 - **Glues and surface material adhesion**
 - **Ceramic surfaces adhesion (catalysts)**
 - **And so on.**
- **Typical:**
 - **0,1 mN resolution with >5 N range (force)**
 - **Option for down to ~10 nN force resolution**
 - **<10 nm positioning resolution (Z distance)**
 - **<50 µm positioning**
 - **Can be inforced to 500 N**

GalaxTester™



All GalaxFamily products comes with a haptic 3D controller.

The devices are:

- Modular
- Easy to use
- Price competitive



THANK YOU!

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