



The MiCRoN Project

Microsystem & Machine Vision Laboratory

19th Jan 2005



MMVL

<http://www.shu.ac.uk/research/meri/mmvl/>

MRC

http://www.shu.ac.uk/research/meri/modelling_rc.html

MERi

<http://www.shu.ac.uk/research/meri/>

SHU

<http://www.shu.ac.uk/>

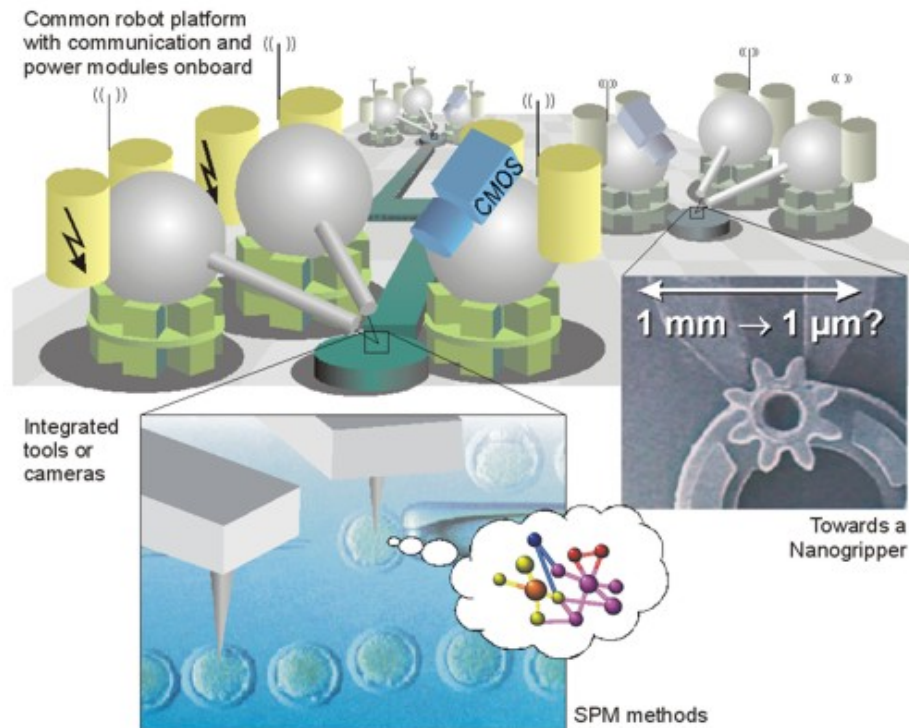




MiCRoN

European Union IST project

Uppsala, Lausanne, St. Ingbert, Athens, Pisa, Barcelona, Karlsruhe



project goals

- Manipulate μm -sized objects
- Closed-loop control of robots
- 3D object recognition and tracking

image acquisition

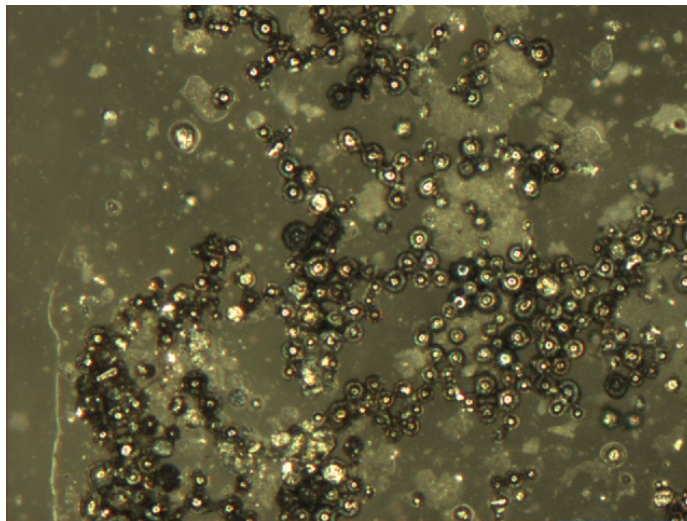
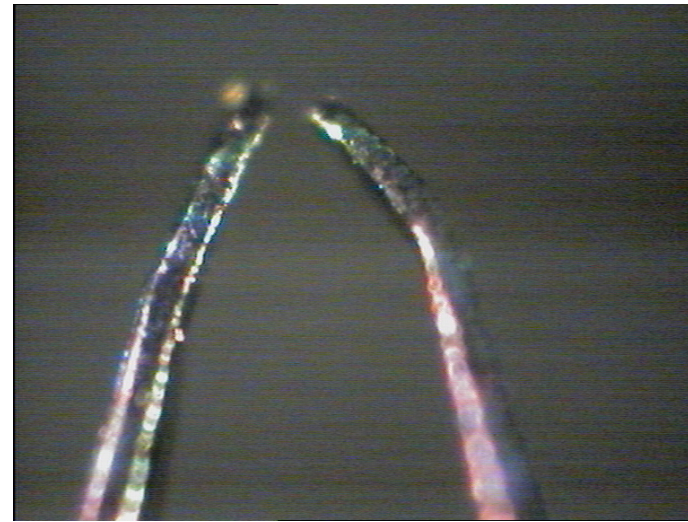
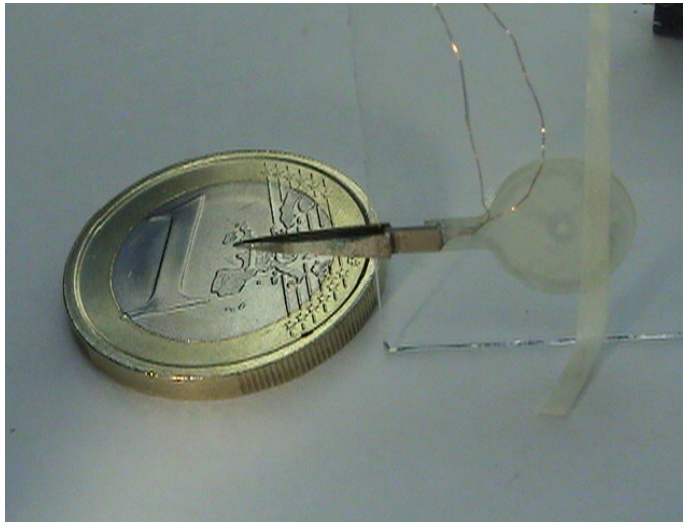
- micro-camera
- microscope

<http://wwwipr.ira.uka.de/~micron/>

<http://www.cordis.lu/ist/>



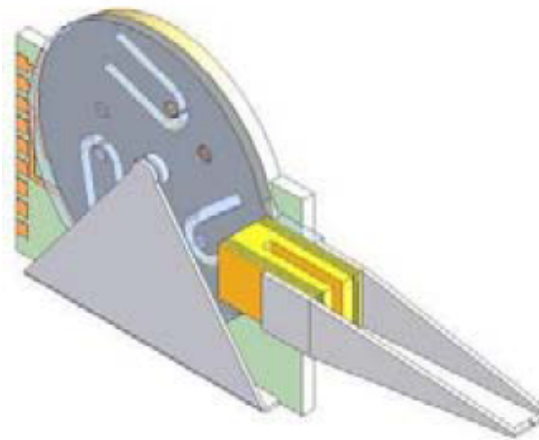
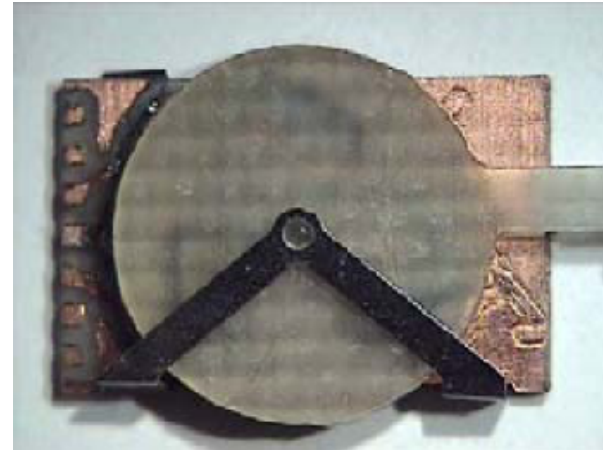
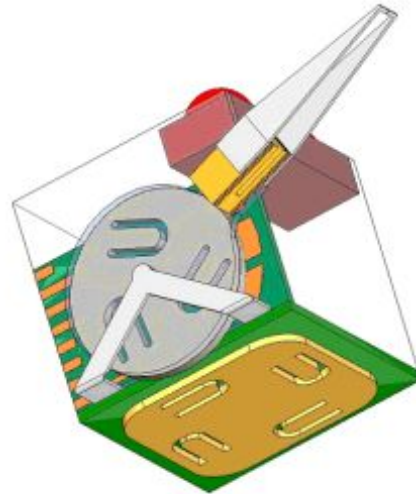
Scuola Superiore Sant'Anna (Italy)



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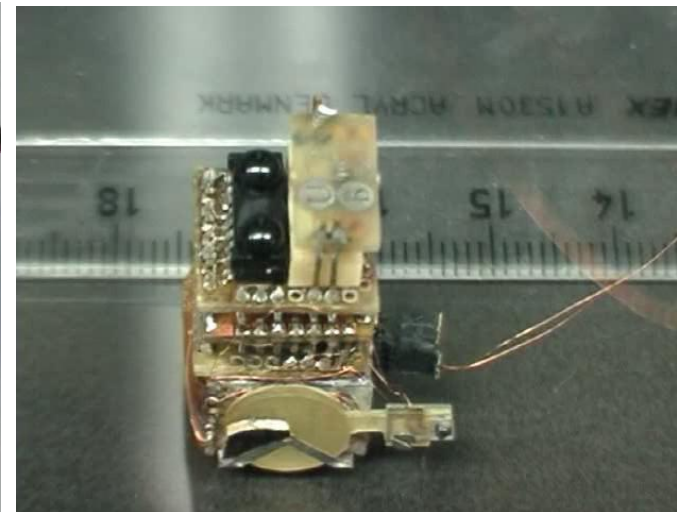
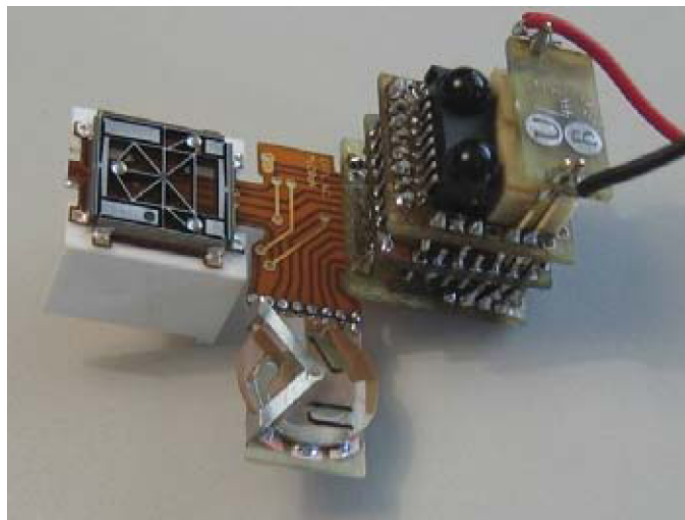
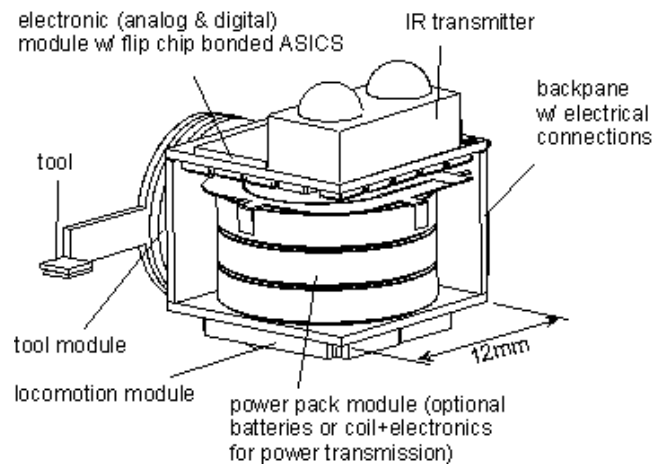


Uppsala University (Sweden)



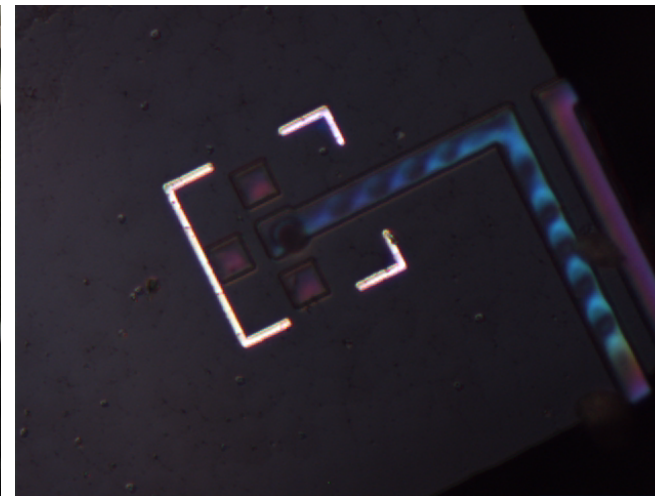
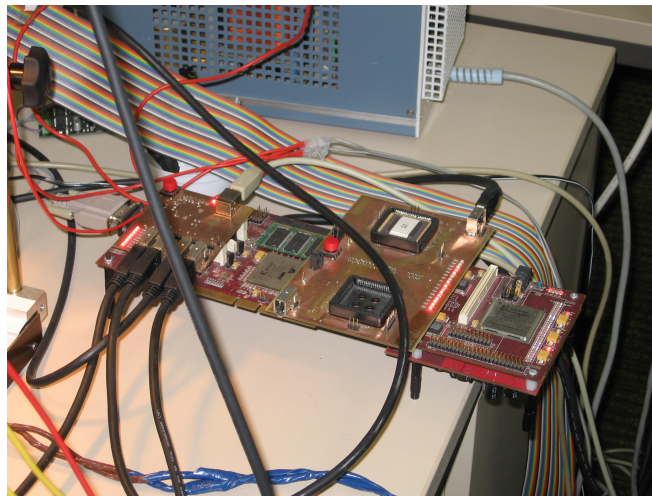
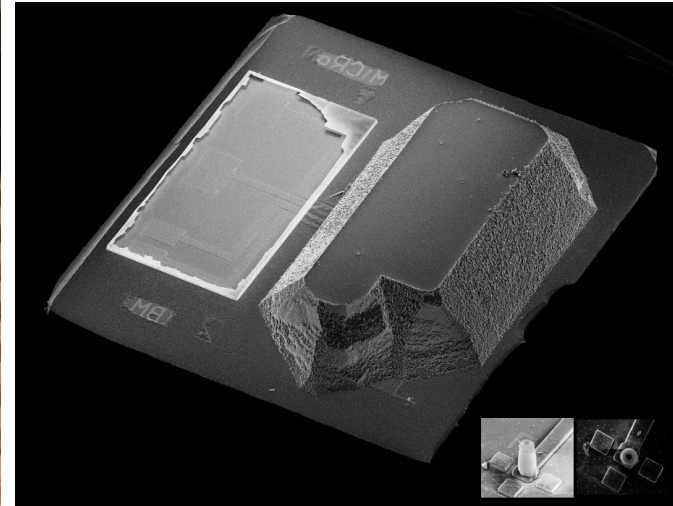
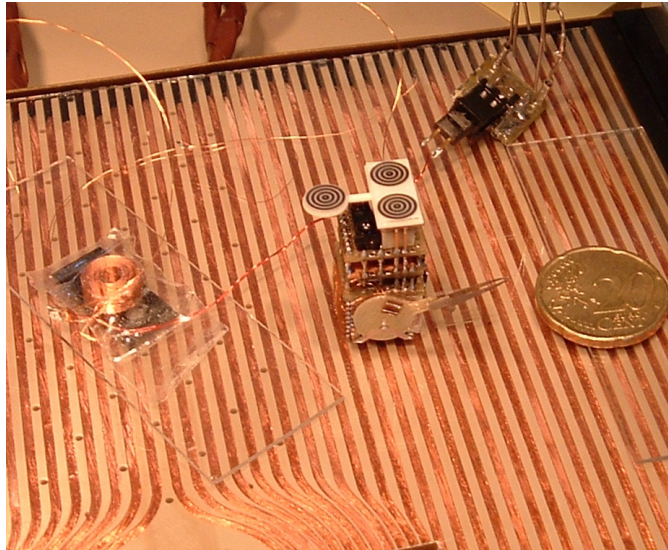


Ecole Polytechnique Fédérale de Lausanne (Swiss)



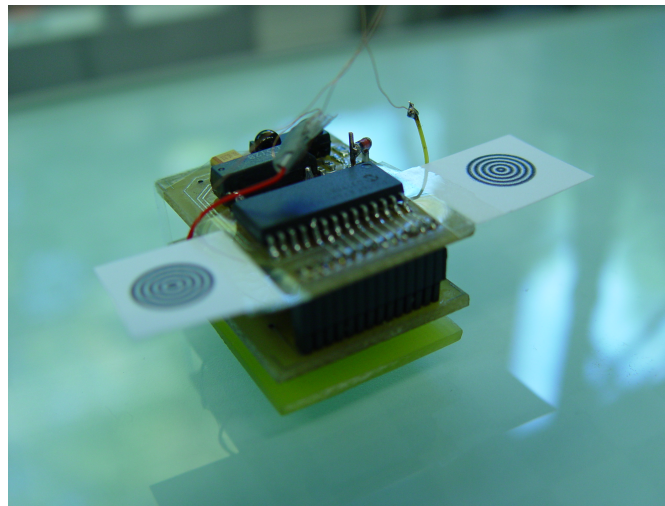
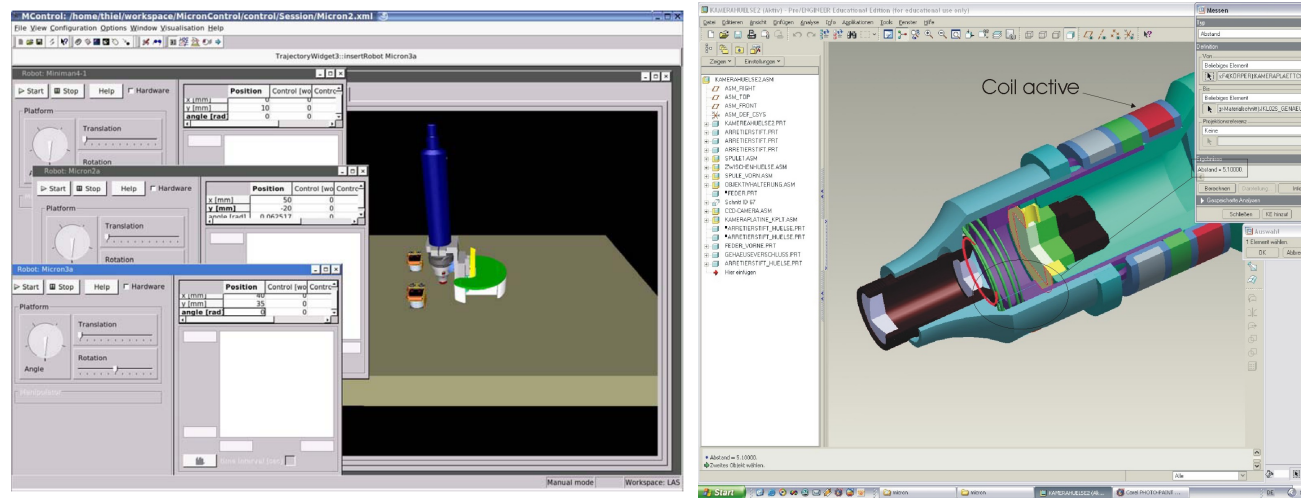


Fraunhofer Institute, St. Ingbert (Germany)



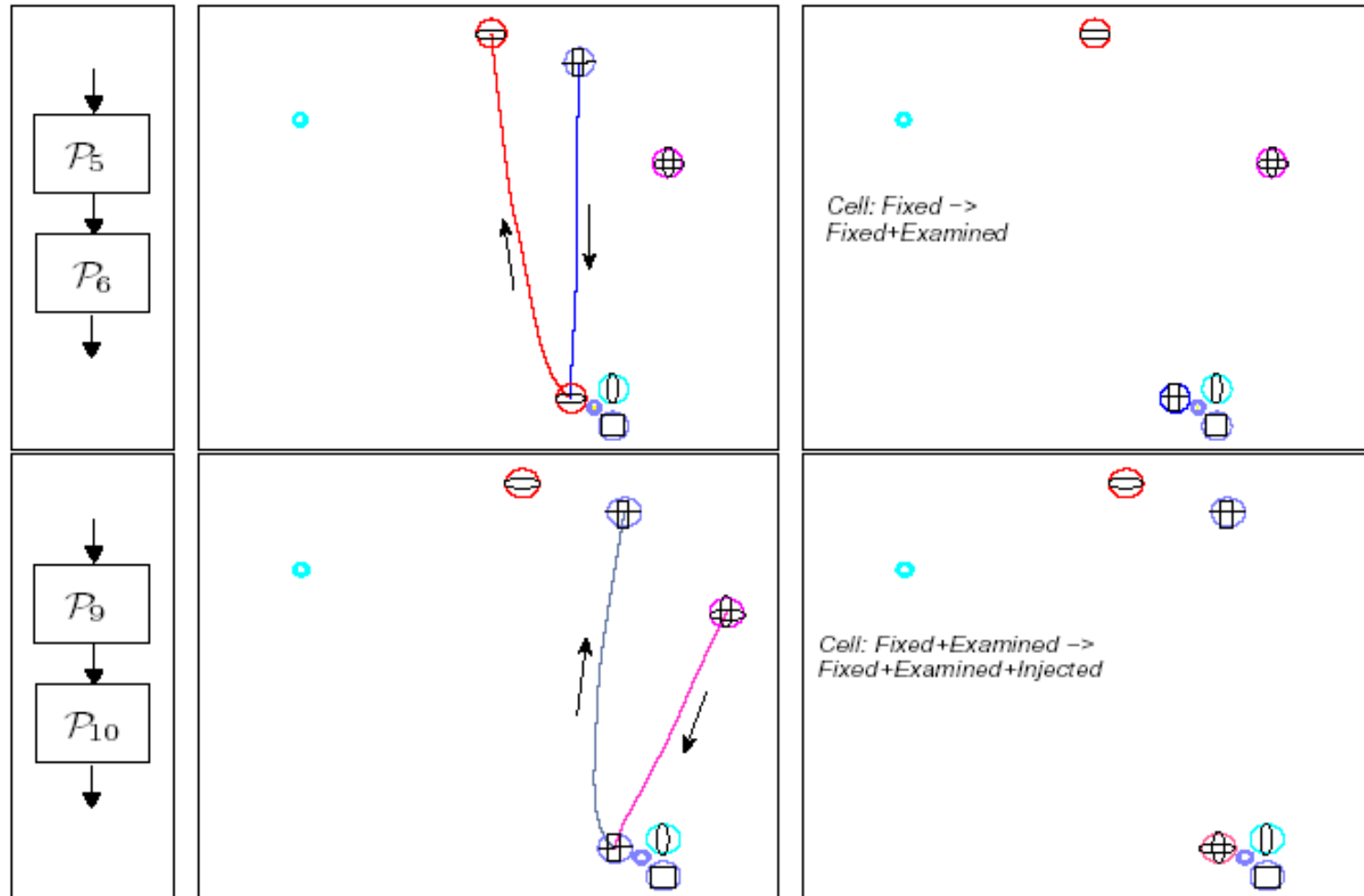


Karlsruhe University (Germany)



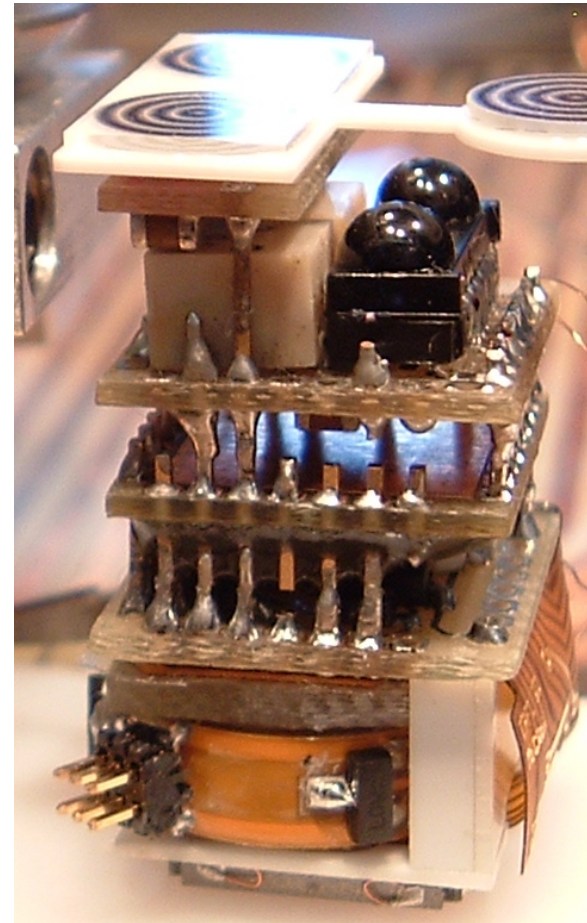
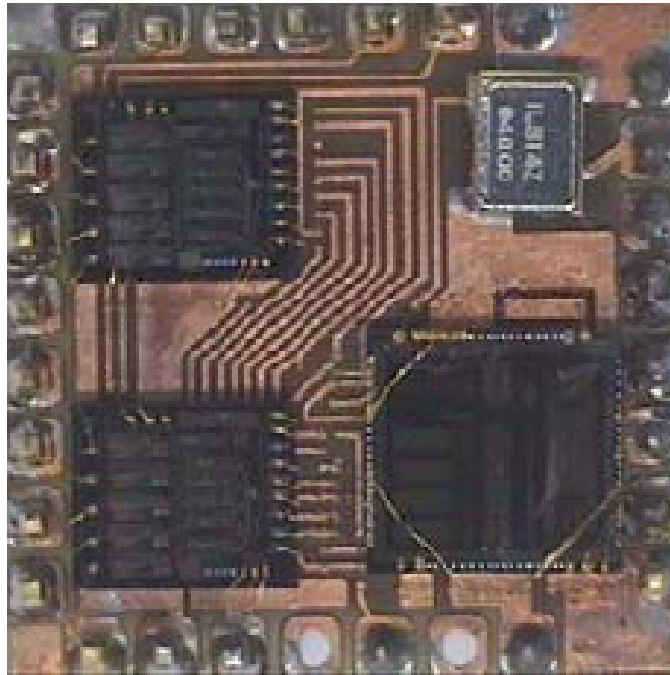


National Technical University of Athens (Greece)



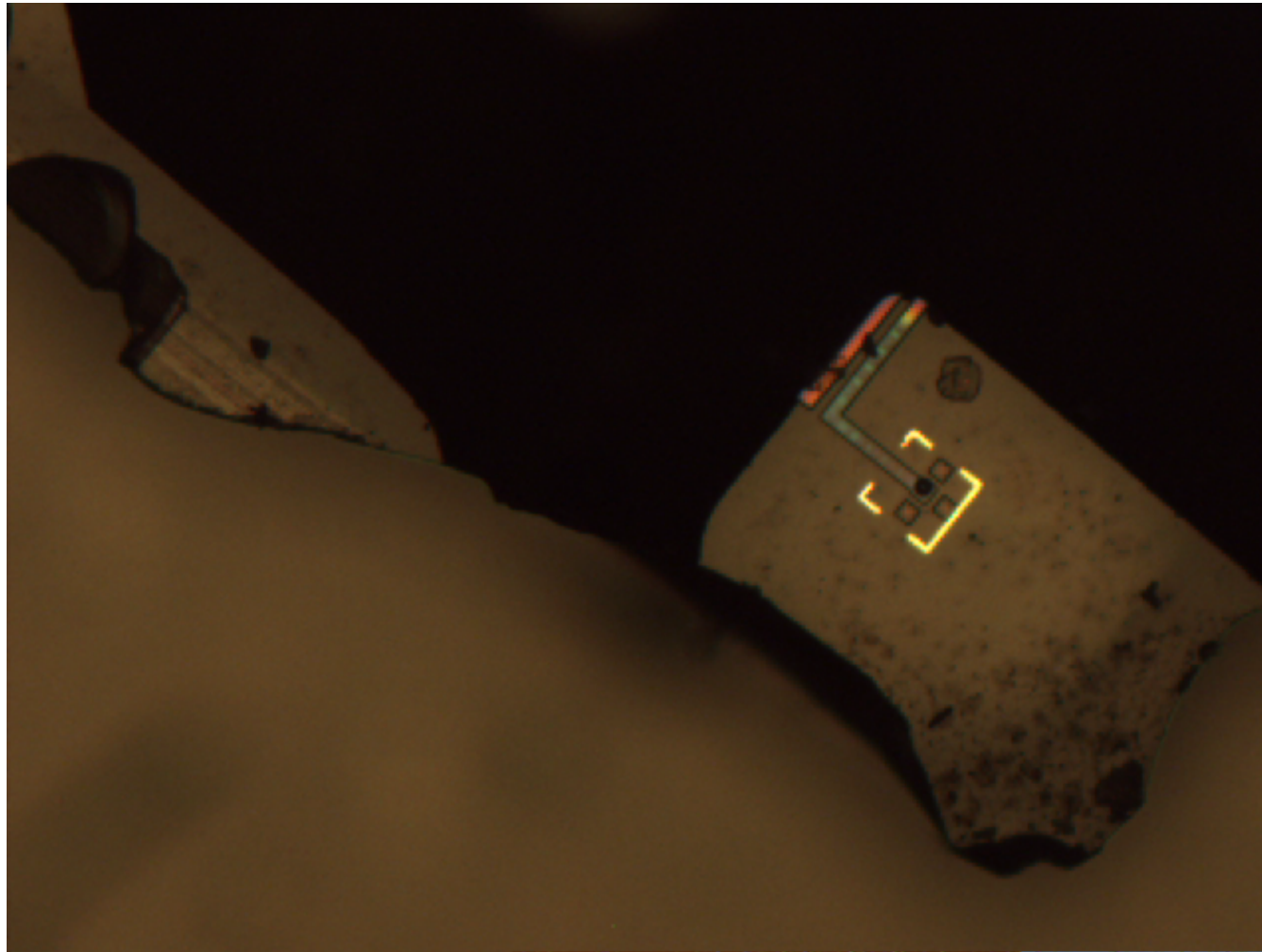


University of Barcelona (Spain)



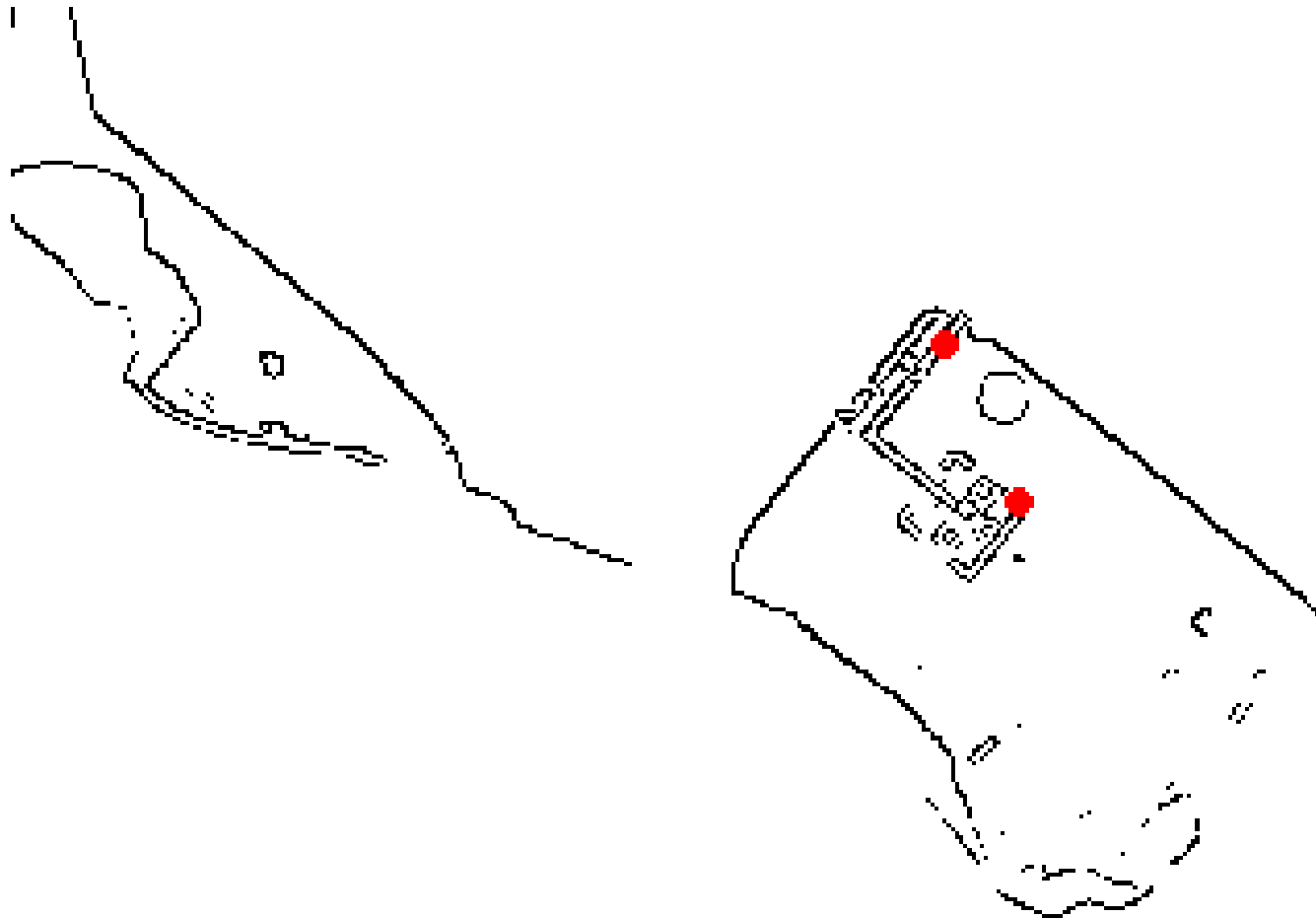


geometric hashing (i)





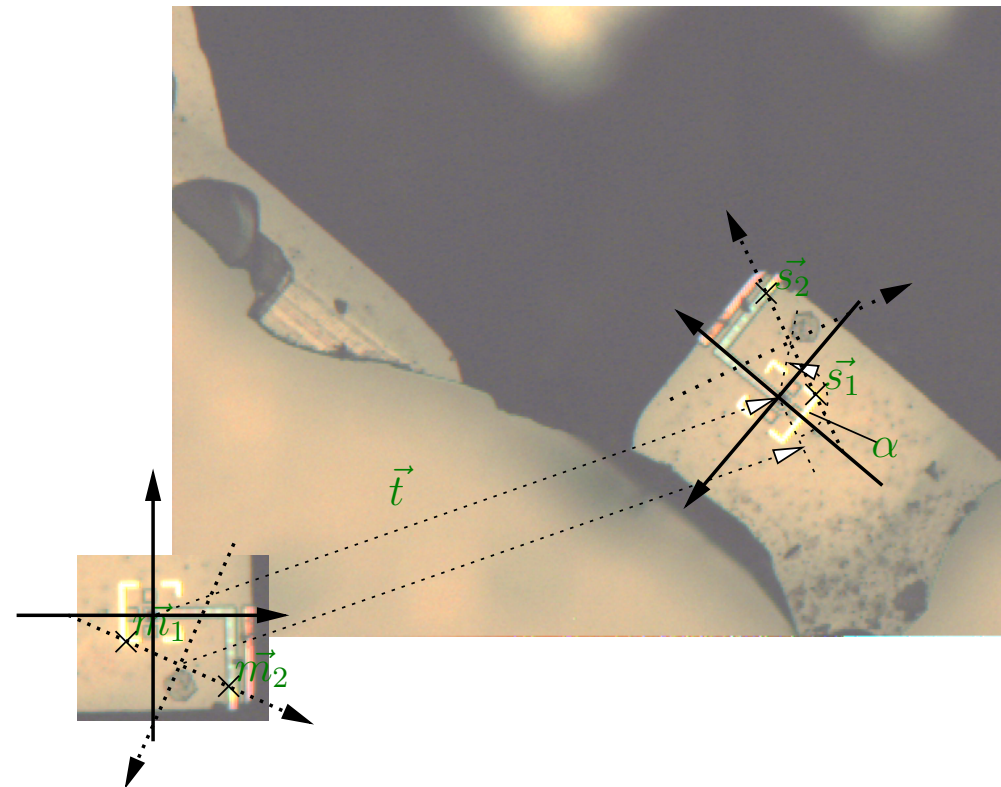
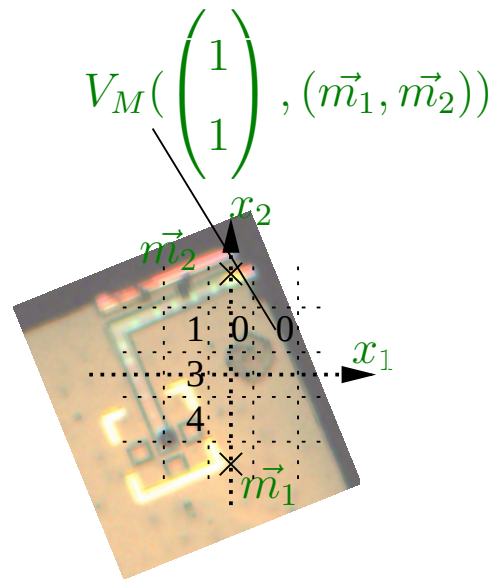
geometric hashing (ii)





geometric hashing (iii)

3-D / 3 DOF





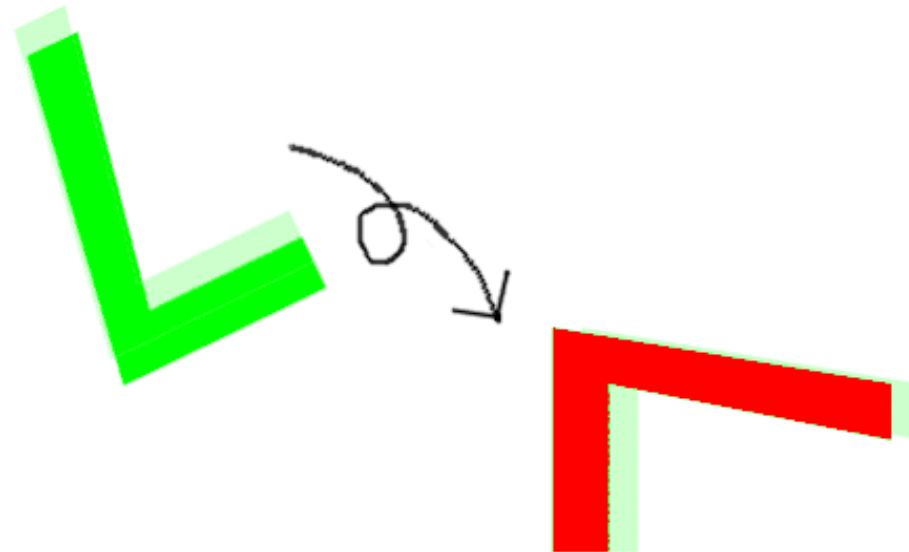
geometric hashing (iv)





bounded hough transform (i)

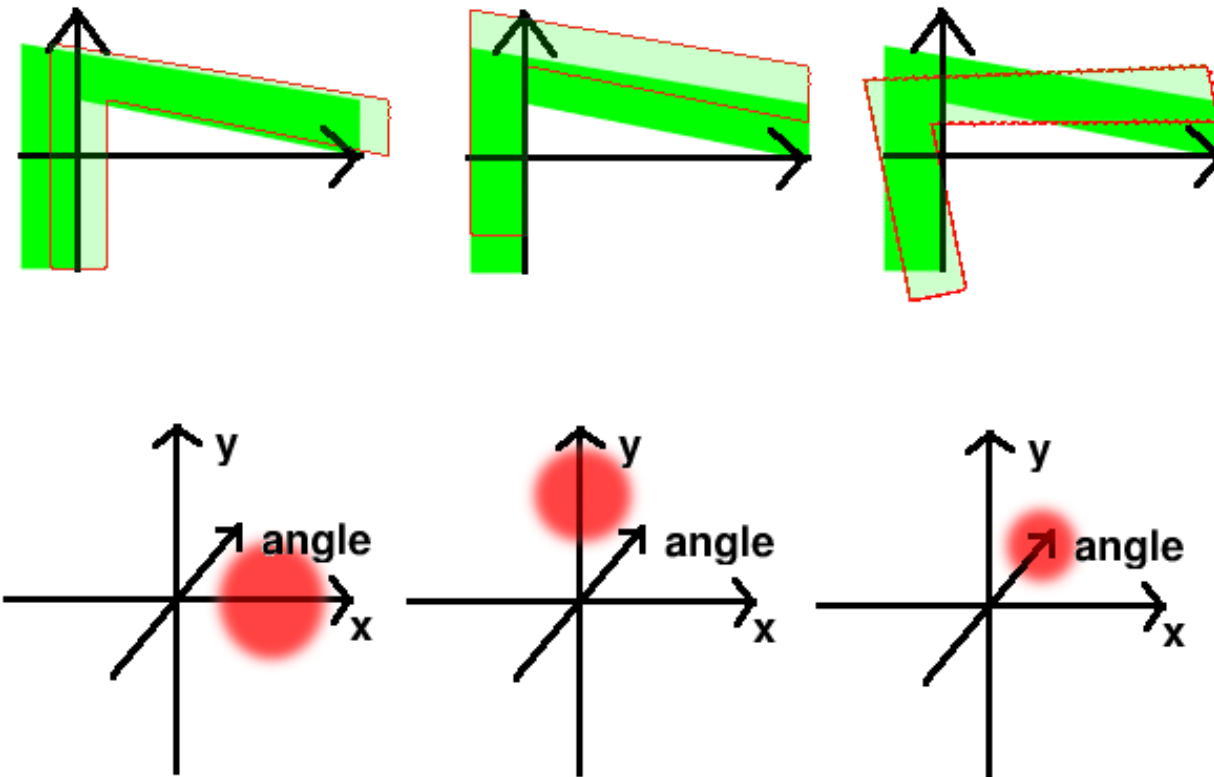
inverse transformation





bounded hough transform (ii)

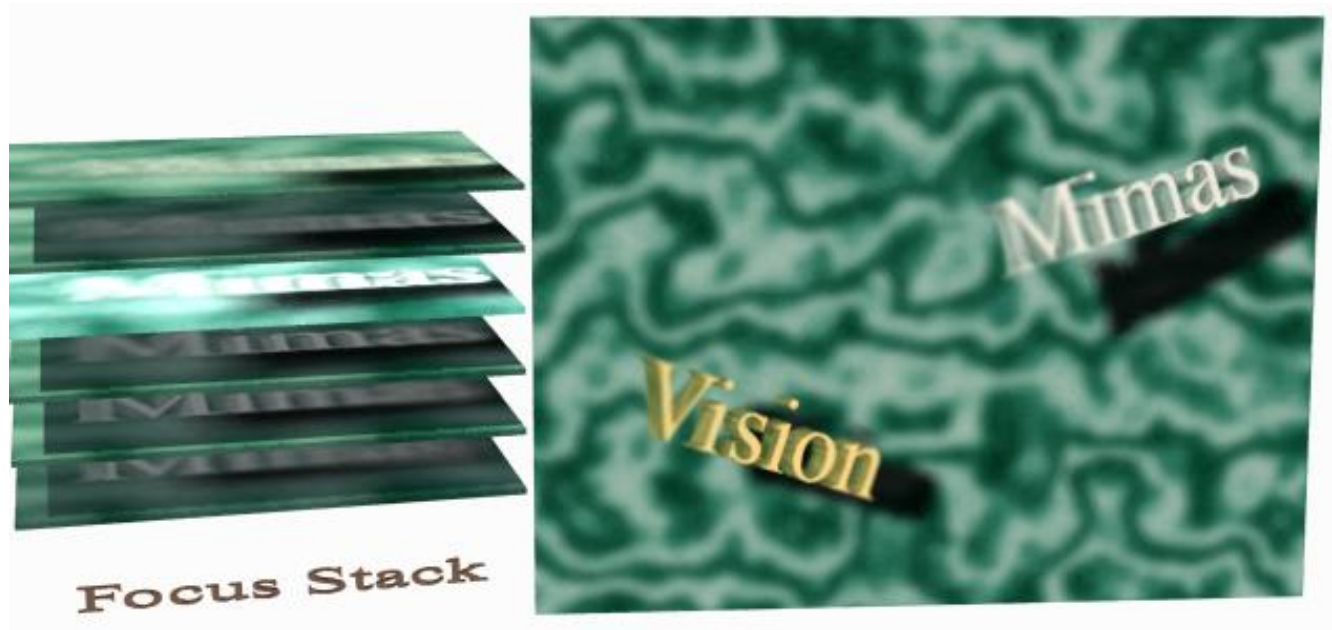
houghspace for relative shifts





depth perception)

focus stacks for 4 DOF





tests

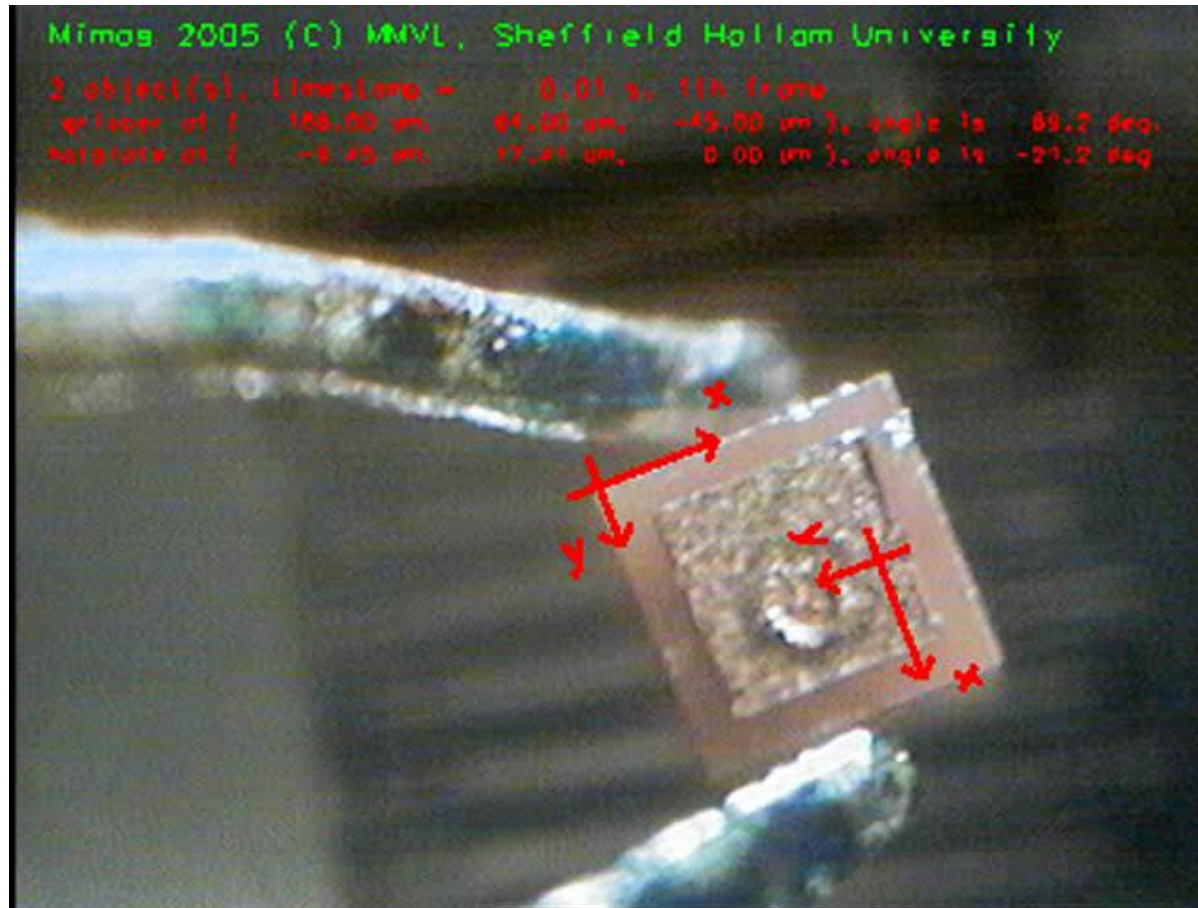
gripper





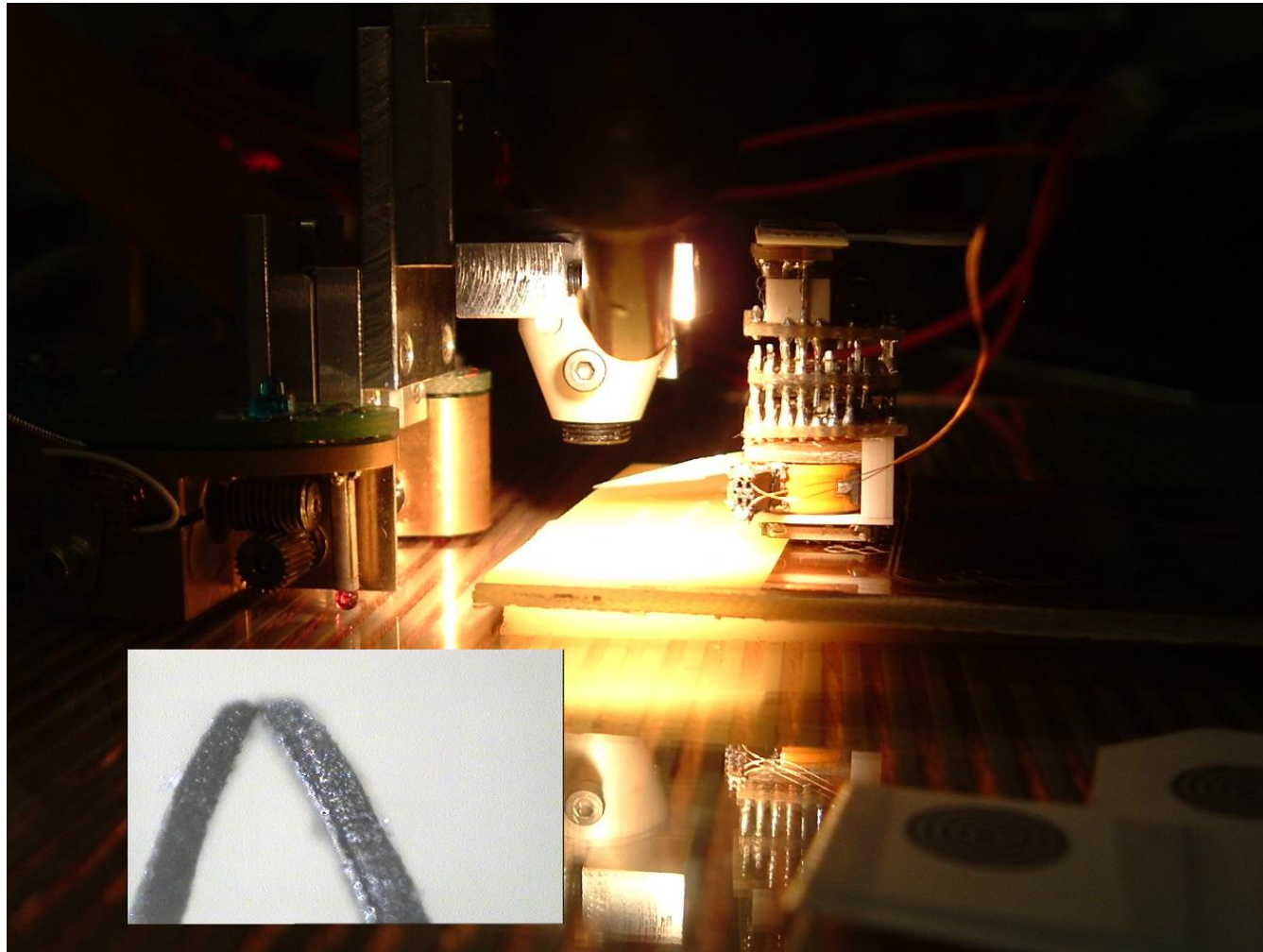
tests

gripper2



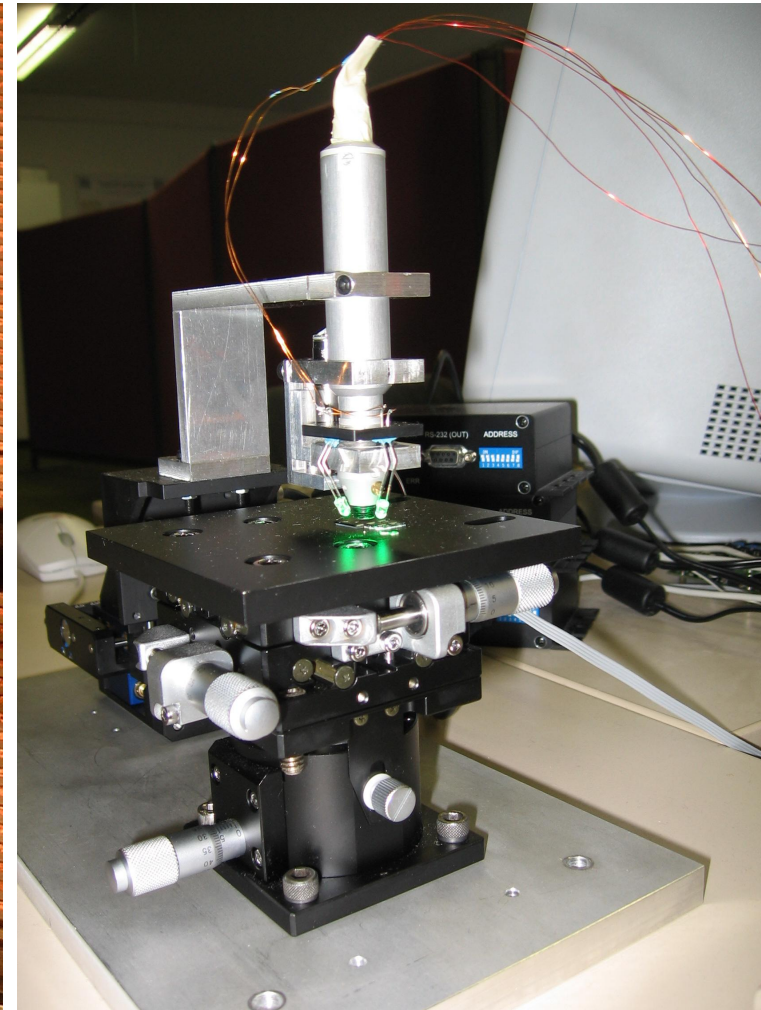
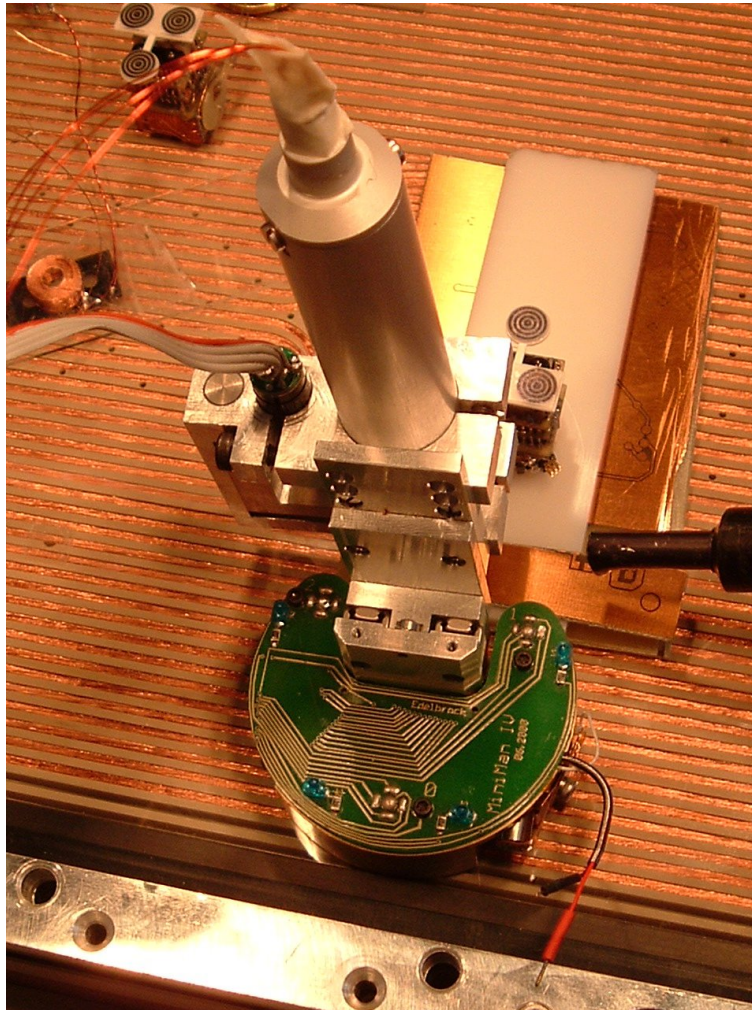


MiCRoN setup



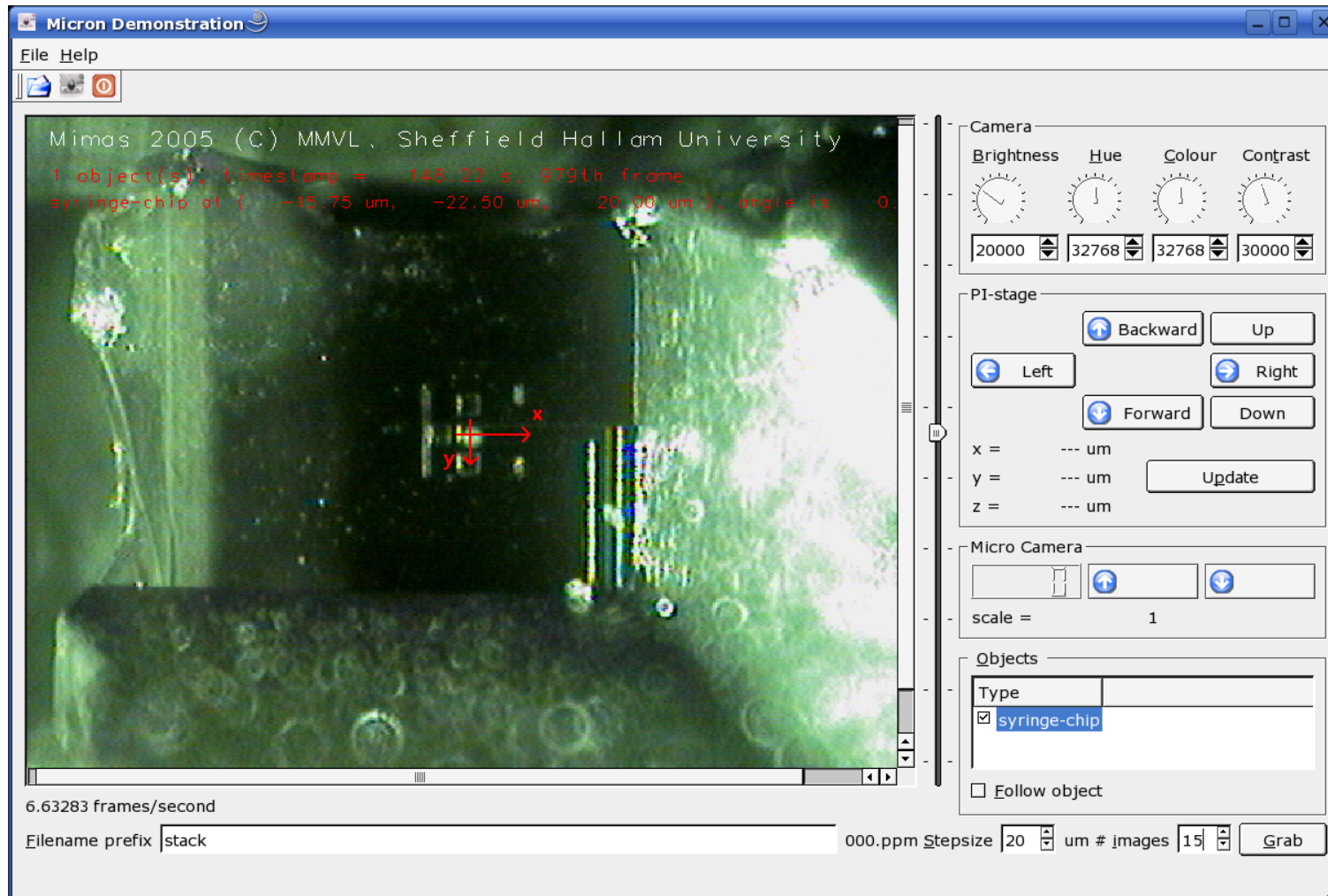


Sheffield Hallam University





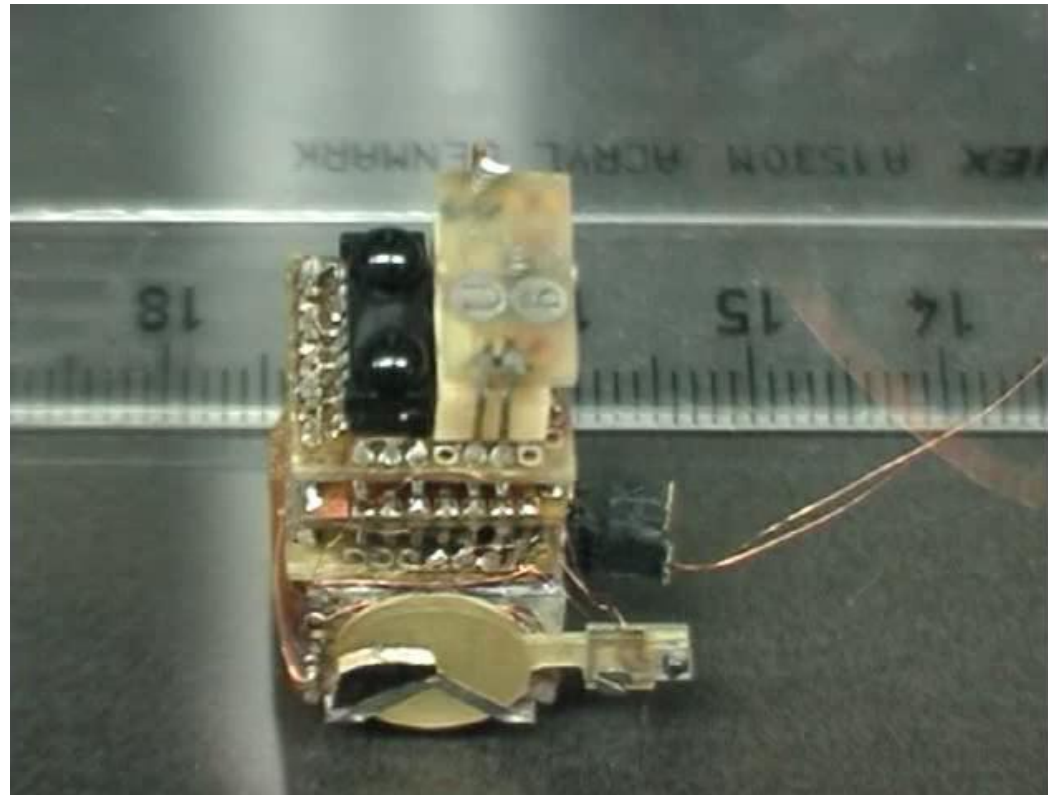
Graphical User Interface





MiCRoN

robot



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<http://vision.eng.shu.ac.uk/mediawiki/>

