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eChallenges e-2010

Warsaw, 28 October 2010

My life and career





- **Born in Croatia**

Slavonski Brod

- **Primary and Secondary Education - Montenegro**

Podgorica (Titograd), Montenegro

- **University of Montenegro, Faculty of Electrical Engineering**

Dipl. Ing 1990-1994; and MSc 1995-1997

- **University of Oxford, Department of Engineering Science**

DPhil 1999-2004

- **University of St Andrews, Bute Medical School and School of Physics and Astronomy**

Research Fellow; 2004-2005

- **University of Liverpool, School of Biological Sciences and Department of Physics**

Research Fellow; 2005-2008

- **University of Manchester, School of Electrical and Electronic Engineering and School of Mathematics**

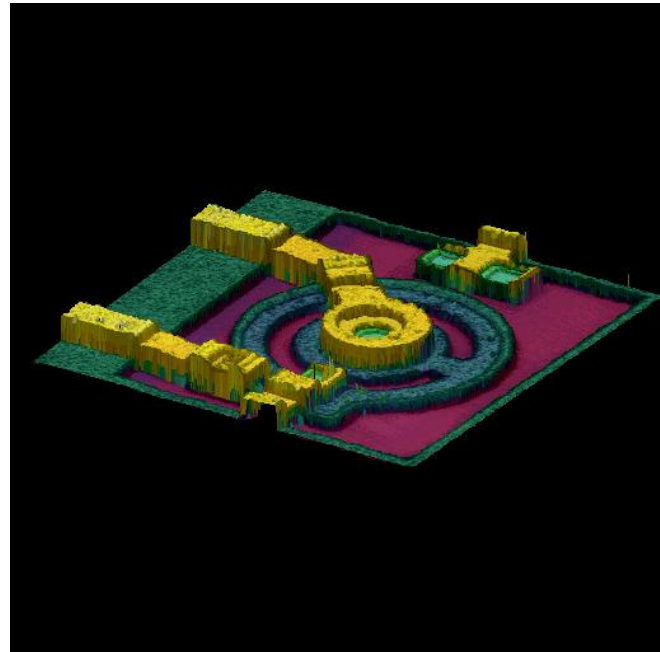
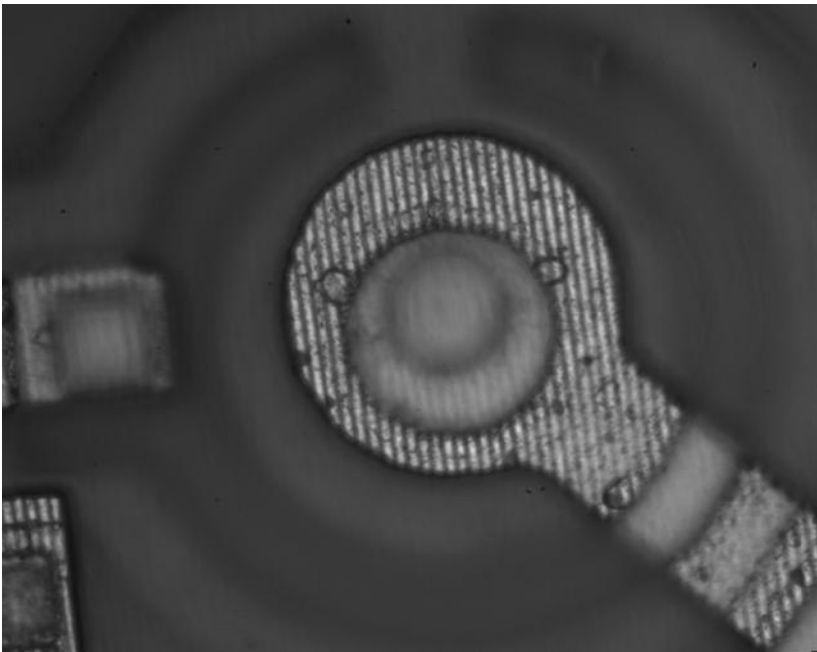
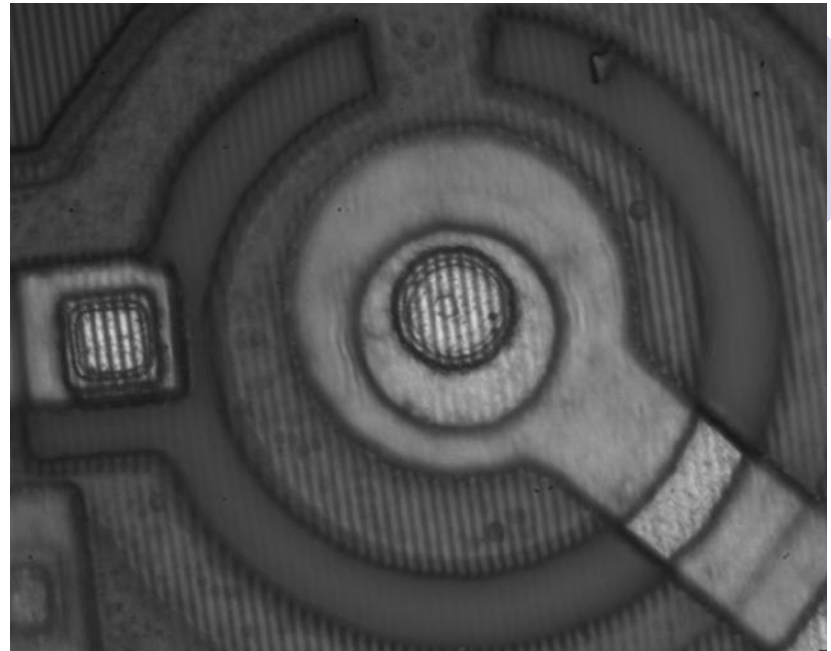
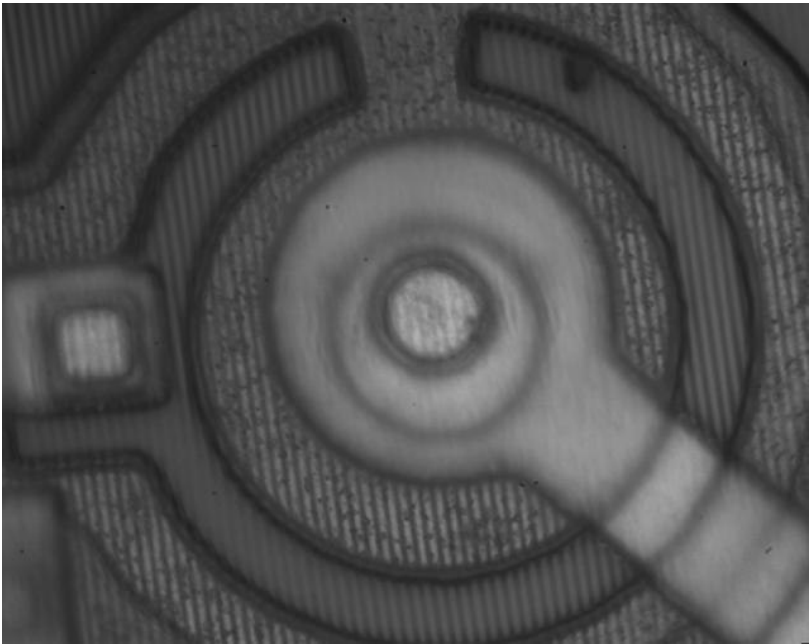
Research Associate; 2008-now

WIDE-FIELD OPTICAL SECTIONING MICROSCOPE USING STRUCTURED ILLUMINATION

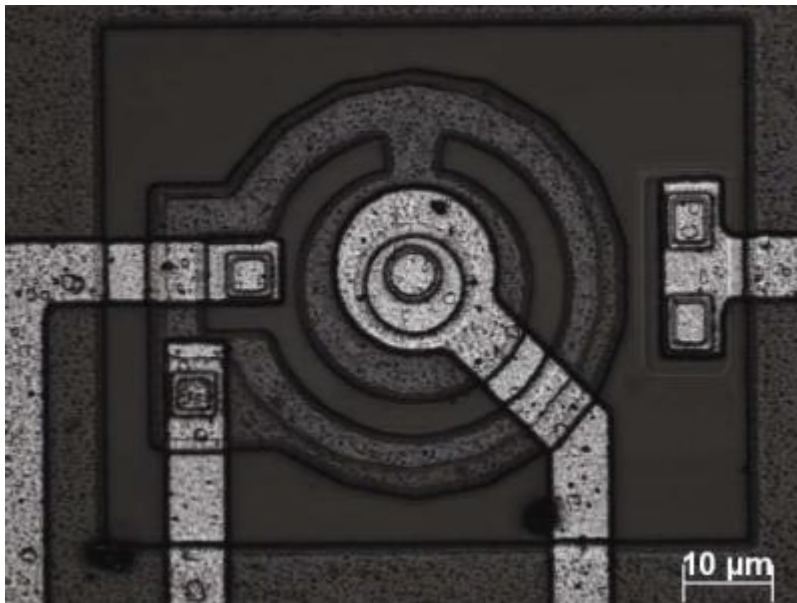


Dejan Karadaglić
University of Oxford
Department of Engineering Science
Somerville College

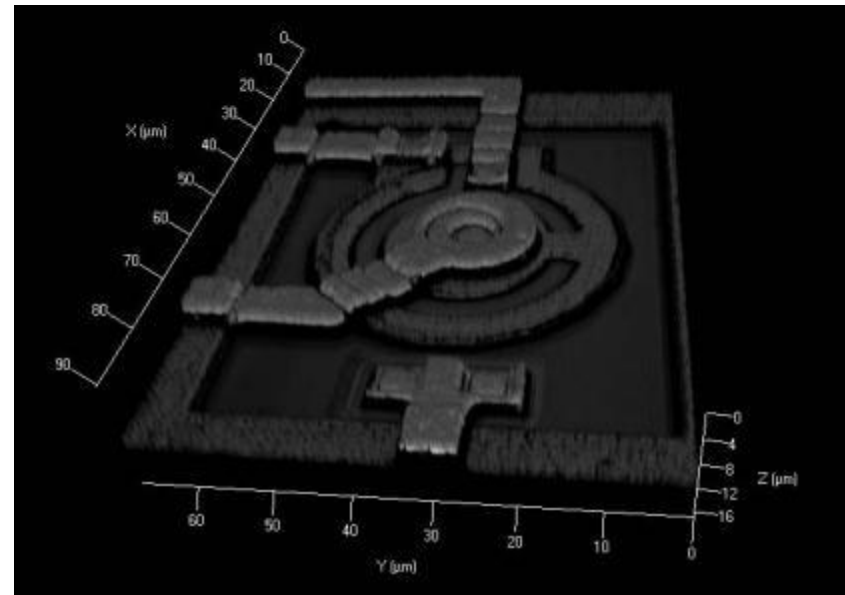




Possibility of presentation



Extended Focus



3D render

University of Manchester

MANCHESTER
1824

- British largest single-site university
- Formed 2004 by merger of UMIST and The Victoria University of Manchester
- 4 Nobel laureates among present staff (25 counting former students and staff)
- More than 37000 students
- About 5800 academic and research staff
- Budget £755M (€850M)



University of Manchester

2015 Vision (Manchester 2015 Agenda)

- Research Excellence
(to be among world top 25)
- Higher learning
- Social responsibility

Finding a better way

Landmine detection project

“When I visited Bosnia I was appalled by the injuries I saw, especially to children, caused by abandoned mines. On the plane home, I just kept thinking “there must be a better way”.

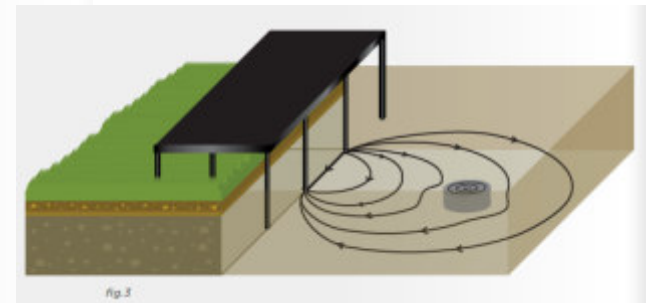
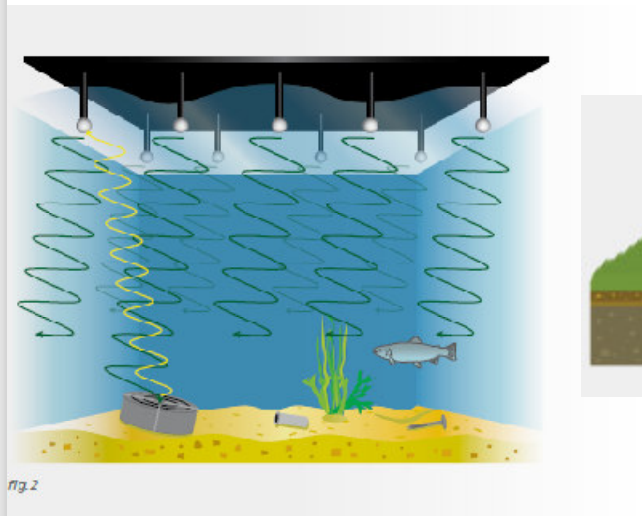
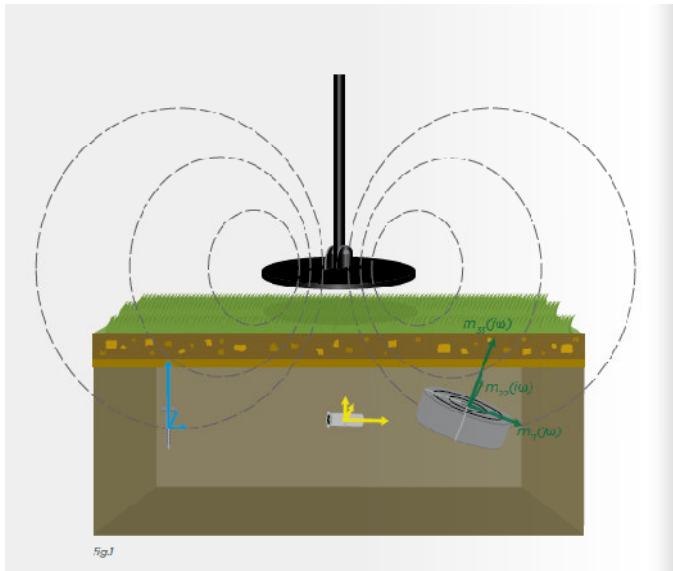


Sir Bobby Charlton



Landmine detection: Combination of approaches

- Improving metal detection
- Ground/Water Penetrating Ultra Sound
- Electrical Impedance Tomography



My participation on EU projects

- WUS Austria visit to Montenegro 2005
 - Brain gain program
- TEMPUS CD-JEP-40017-2005 project
 - 2006-2008

My collaboration with Western Balkans

- Tempus
 - Universities of Montenegro and Novi Sad
- MI3 project with Data Acquisition Board
 - Micronas NIIT Novi Sad
- EMBody with Matcam
 - RT-RK Novi Sad
- Landmine Campaign
 - Bosnia inspiration



Tempus

- CD_40017_2005 Project
- Introduction of a new study programme in Applied Electronics at the University of Montenegro
- 2006-2008
- Consortium of 4 Universities (Patras, West Bochemia, Novi Sad and Montenegro)
- 2 Individual external experts
- 1 SME (EMI Podgorica)

New modern LAB



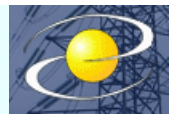
OLD LAB



NEW LAB



R. Stojanovic



1. Curriculum development, new syllabi, new books and manuals



5 new textbooks



Laboratory and programme today

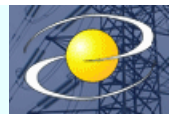
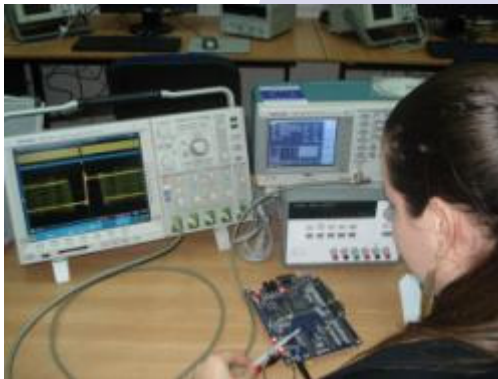
Programme is sustainable and very vital

Students' most favourite course

The third generation of new students is enrolled

More than 50 diploma thesis completed so far

A number of foreign teachers and students hosted





MI³ Project (2005-2008)

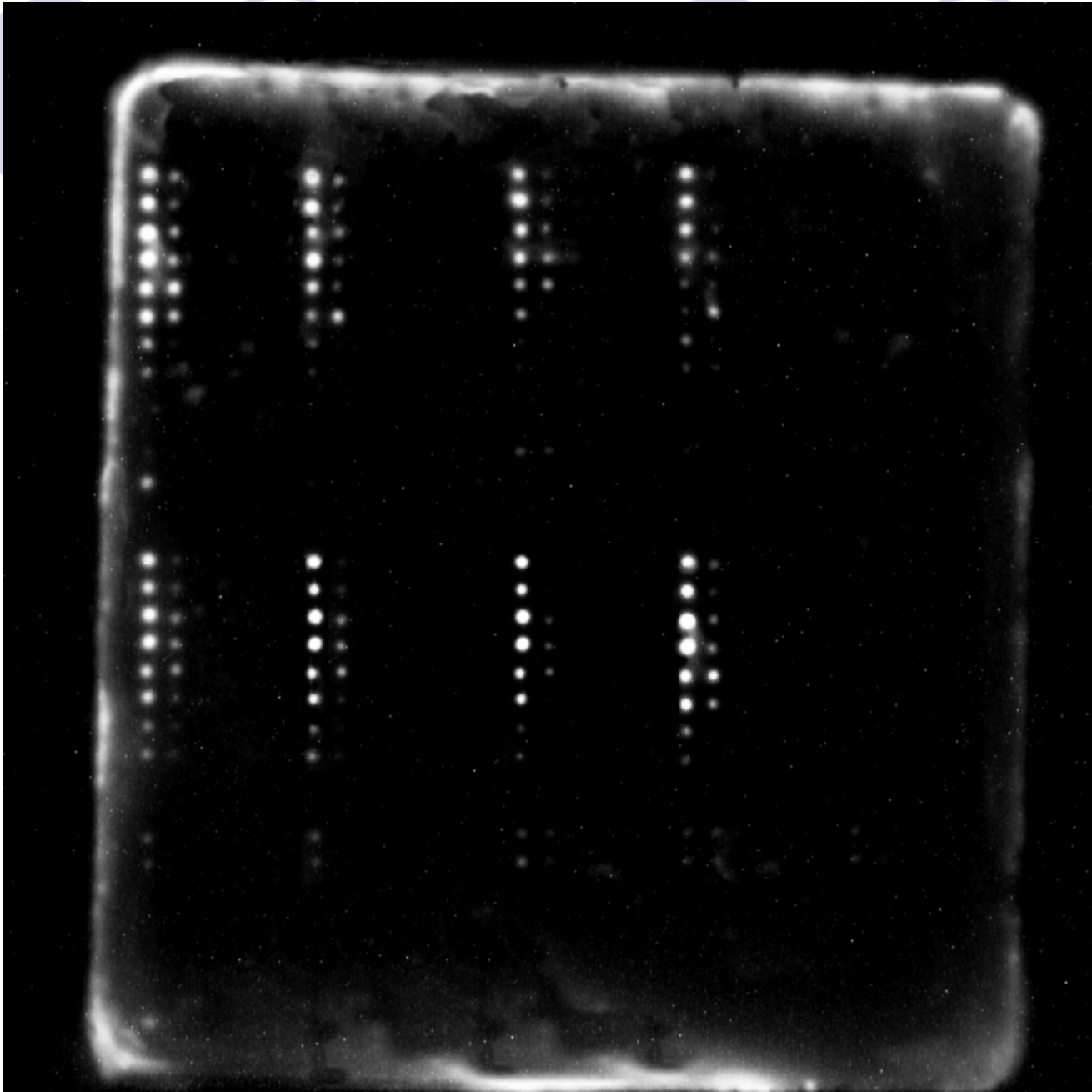
- RCUK Basic Technologies Grant
- Aim to find scientific and other high-end use of CMOS APS
- 11 Academic institutions across UK
- Our task – to make DNA detector using CMOS APS
- University of Liverpool



Different DNA labels

- Fluorescence
- Gold-nanoparticles
 - Silver enhanced
 - Using their scattering properties
- **(Enhanced) Chemiluminescence - ECL**







We used Serbian produced Image Acquisition Board

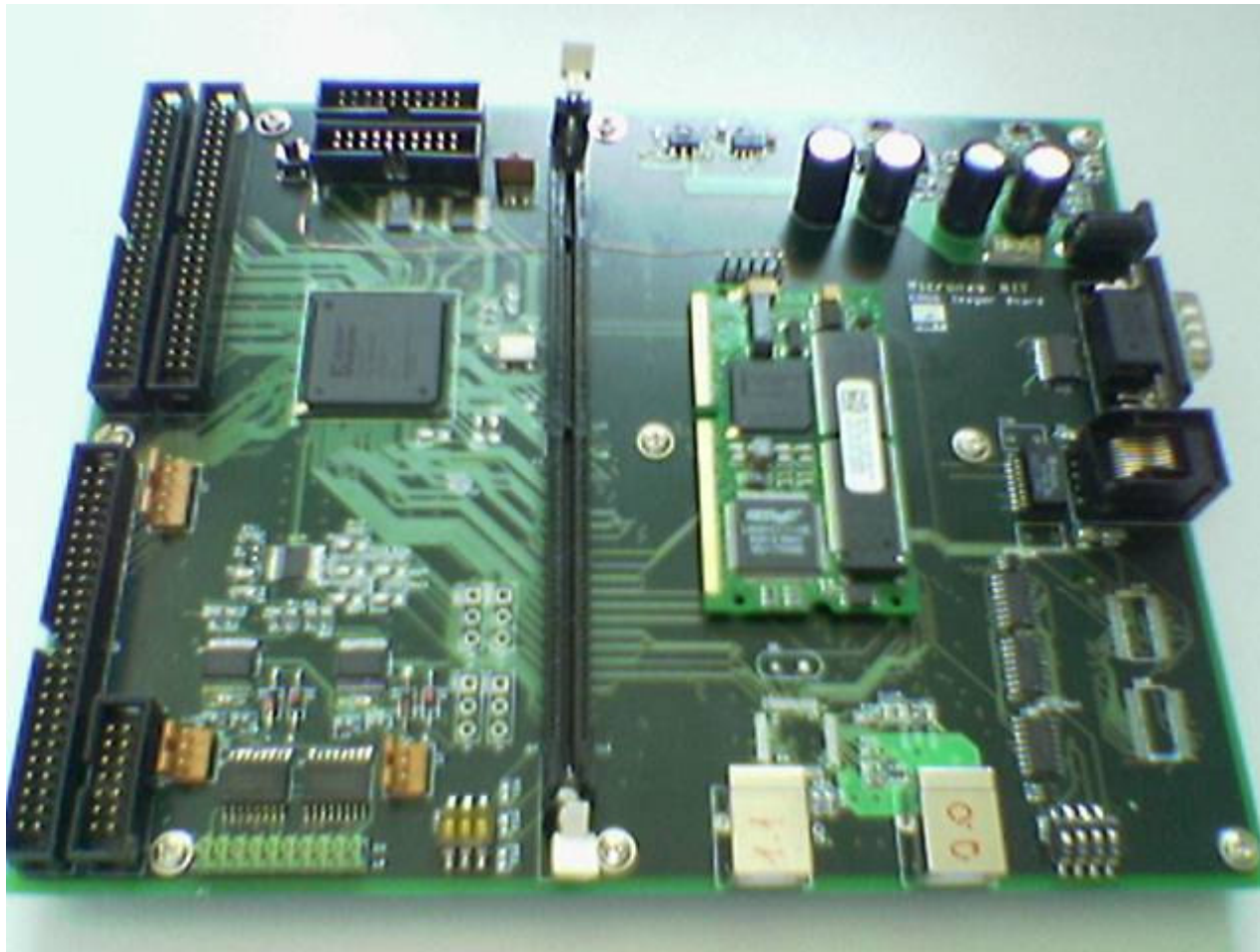
- Designed by experts:
 - University of Sheffield,
 - Rutherford Appleton Laboratory Oxfordshire
 - University of Novi Sad
- Produced by MicronasNIT (now RT-RK)



Multidimensional Integrated Intelligent Imaging

Giving Science a New Image

MI³ Image Acquisition Board



Current project at University of Manchester (2008-2011)

- RT-CAM300 MatCam from RT-RK



We use intelligent IP cameras produced in Serbia



- RT-RK based in Novi Sad, Serbia
- Small to Medium Enterprise (SME)
- Designed by experts from University of Manchester and University of Novi Sad
- Based on TI C6000 DSP
- www.rt-rk.com



Conclusions

- There is a considerable potential in collaboration between EU and WB countries in area of science and technology
- The EU funds are not used enough
- *Thank you very much for the invitation!*