



*The Abdus Salam
International Centre for Theoretical Physics*



2335-6

**Workshop on Entrepreneurship for Physicists and Engineers from Developing
Countries**

23 - 27 April 2012

Lessons from Start-Ups and Spin-Offs

Dawood Parker
Melys AFS Ltd.
UK

Lessons from Start-Ups and Spin-Offs

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**Joint ICTP-TWAS Workshop on Entrepreneurship
for Physicists and Engineers from Developing Countries
Trieste, Italy**



Entrepreneurship Workshop
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D. Parker: Lessons from Start-Ups and Spin-Offs


APPROACHES TAKEN

1. Invention – assigned patent to a pharmaceutical company.
2. Formed a company.
3. Invention – sold to lifesciences multinational.
4. Formed a company.
5. Invention – assignment under consideration.

INVENTION

Catheter-tip Oxygen Sensor.

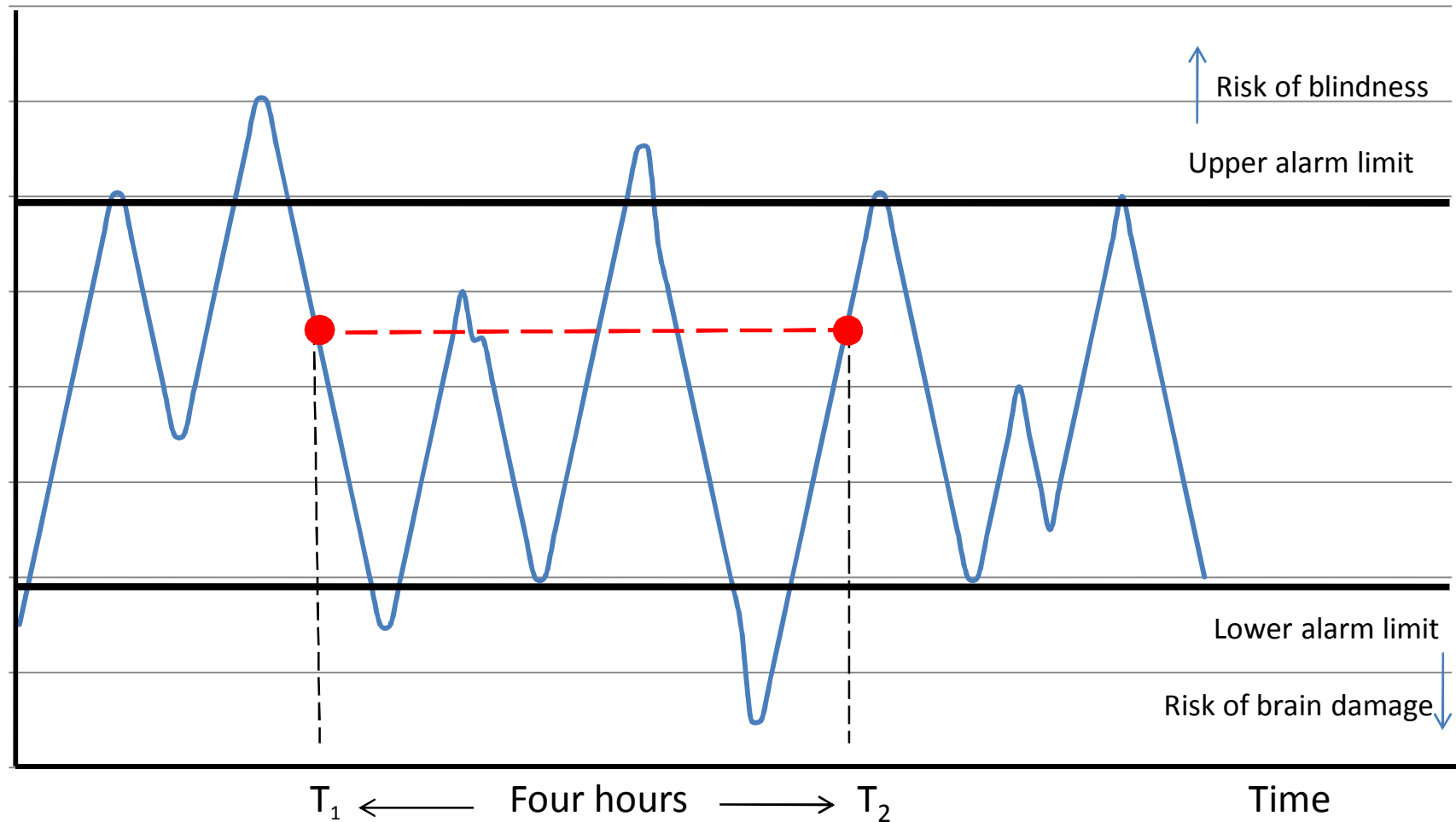
Prior to 1950, the chance of survival
for a pre-term baby
of less than 1200g was nil.

A close-up photograph of a hand holding a thin, transparent, needle-like object, possibly a medical device or a scientific instrument. The object is held between the thumb and index finger, extending diagonally across the frame. The background is dark and out of focus.

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Variation of the Partial Pressure of Oxygen in the Aorta of a Pre-Term Infant.



Benefits

- 3 years funding for 5 physicists in my Biomedical Sensors Research Group.
- 40% overhead to University.
- Consultancy fees.

COMPANY 1

Physiological Instrumentation Ltd

Whitland Abbey, Carmarthenshire, Wales

- Speciality: Newborn Intensive Care Products based on previous university research experience

Company acquired by US patient monitoring company 5 months after formation.

Benefits

- US Company established significant presence in local town.
- More than 50 physicists and engineers employed.
- Significant benefit to the local economy.
- Sale price/investment = 150



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Spin-Off

Magstim Company, Whitland, UK



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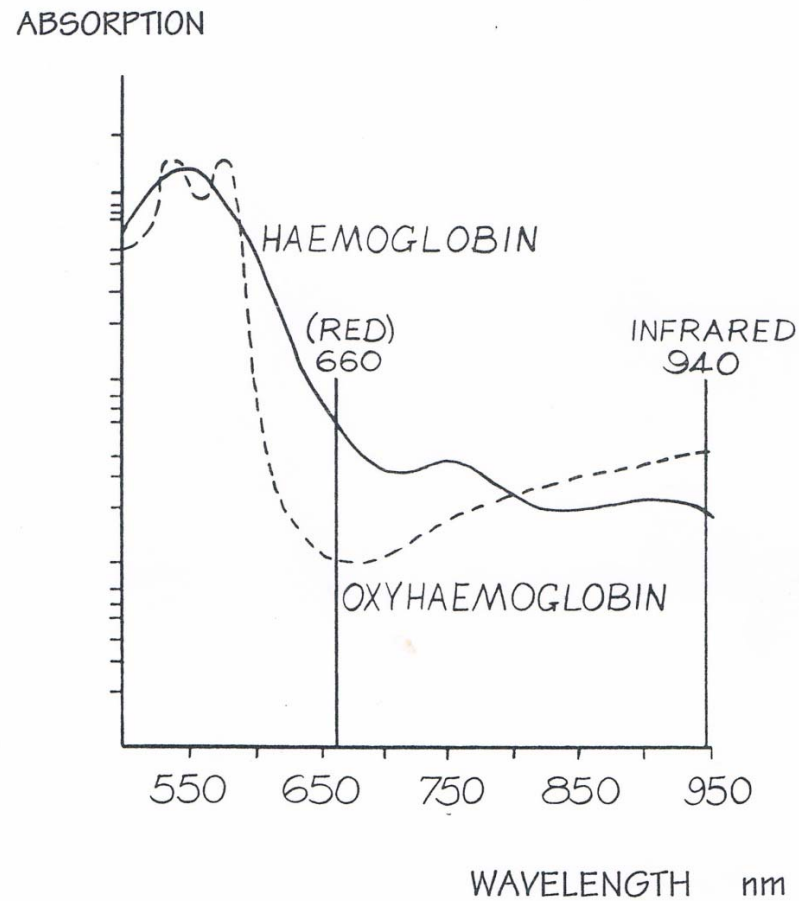
COMPANY 2

Whitland Research Ltd

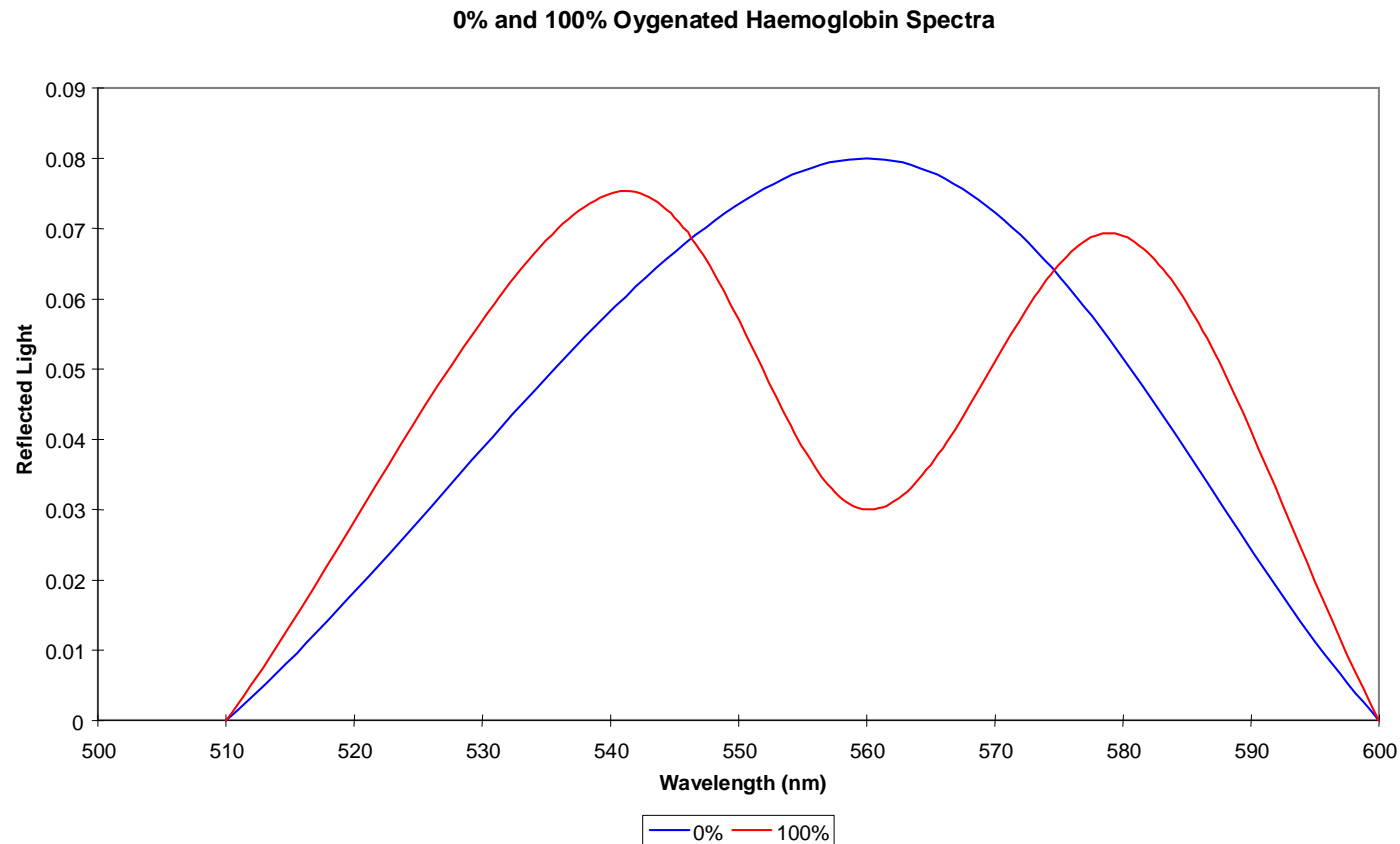
Whitland Abbey, Carmarthenshire, Wales

- Speciality: Non-invasive oxygen saturation monitoring by spectrophotometry.
- Spin-off product: Invasive oxygen saturation monitoring.

Spectra of Blood



The Double Hump



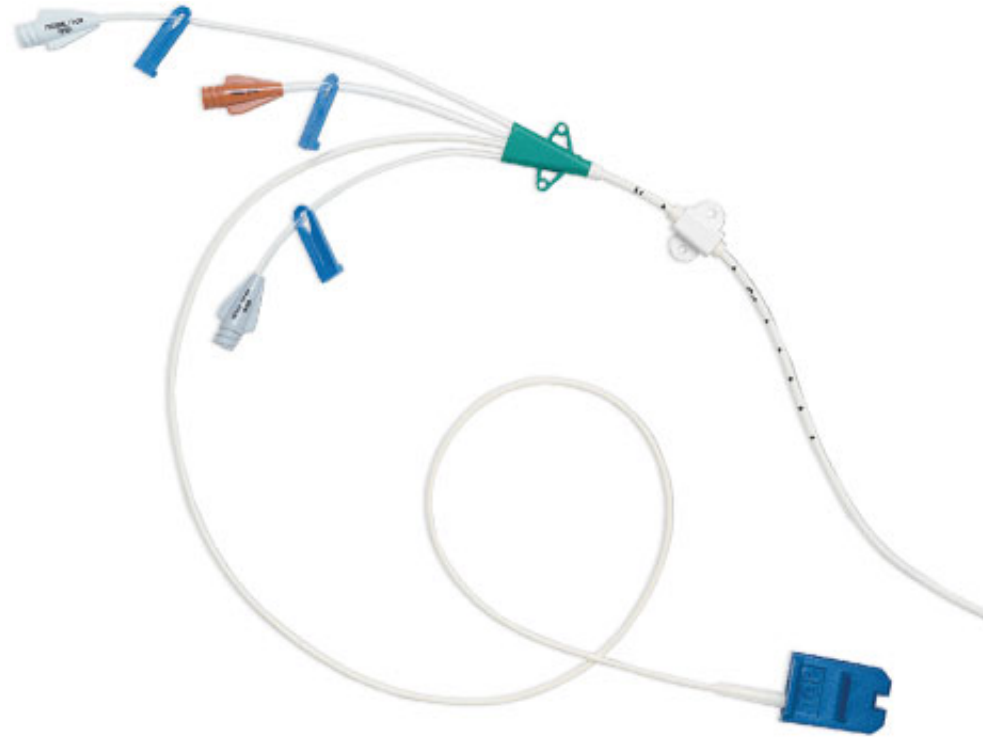
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By adapting our technology to their invasive catheter we showed that the following advantages could be achieved:

- Calibration free
- Disconnect without loss of calibration
- Lightweight connector
- Cheaper monitoring
- User friendly

Oxygen Saturation Catheter



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Benefits

- Company sold to US multinational lifesciences company.
- Significant employment in spin-off company.

Spin-Off

Spectrum Medical

Cheltenham, UK, and South Carolina, USA.



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Company 3

Melys AFS Ltd

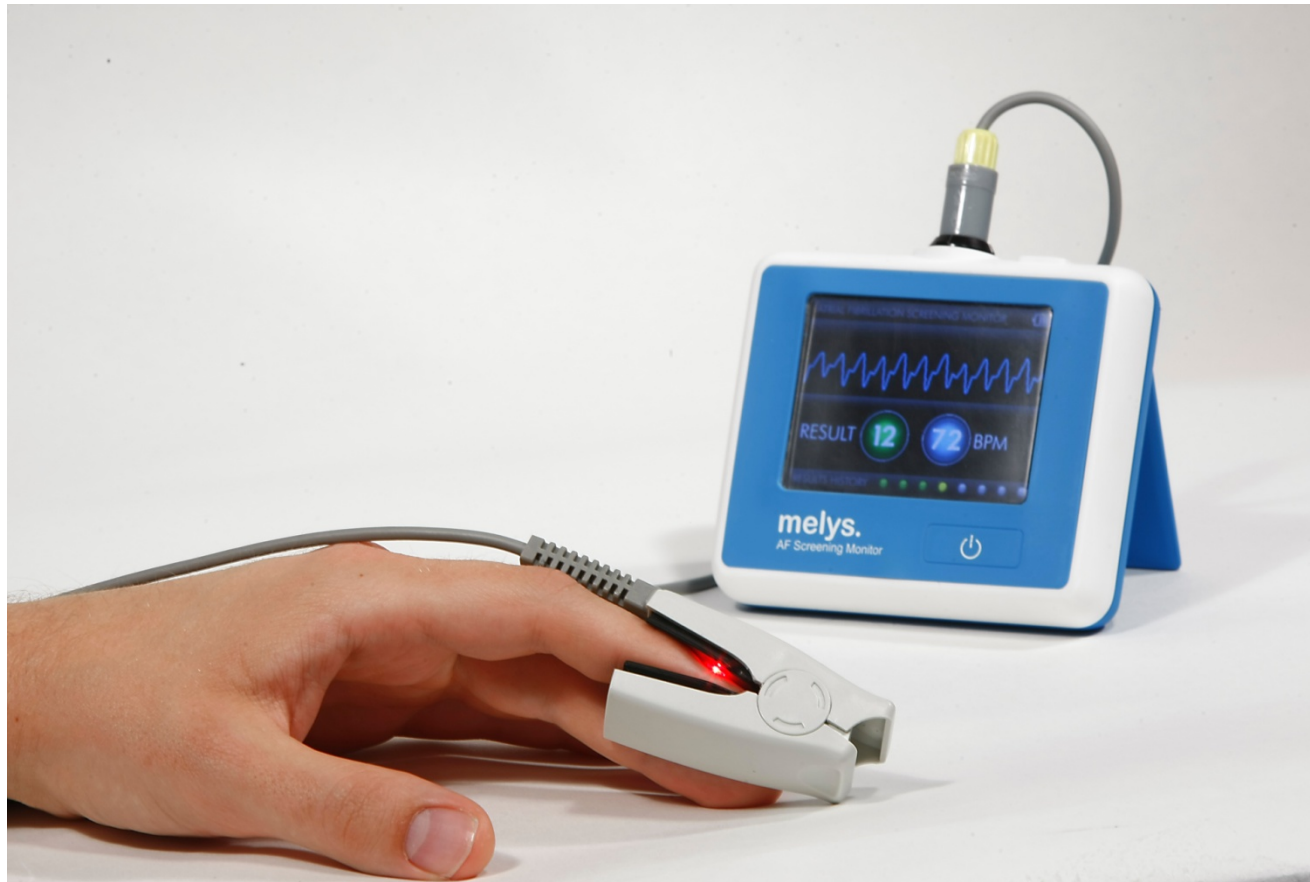
Whitland Abbey, Carmarthenshire, Wales

- Speciality: Detection of irregular heart beat in the elderly.

“People over 65 should be screened for atrial fibrillation throughout the UK, say stroke specialists.”

British Medical Journal, 10 March 2012

Melys AF Screening Monitor

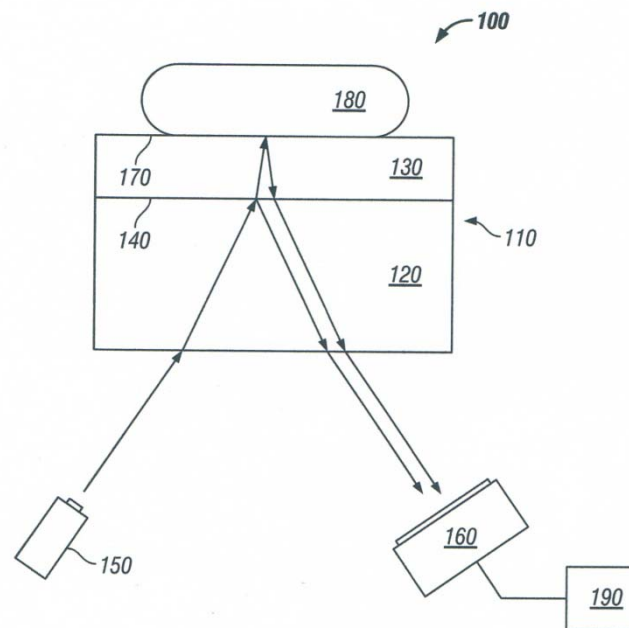


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INVENTION

International Patent Application No. PCT/GB2011/051246. Glucose Monitor
Publication No. WO2012/004586 published 12th January 2012



Global Diabetes Market – Regional Analysis

The United States	2008 - \$ 12.90 Billion 2015 - \$ 19.40 Billion
Europe	2008 - \$8.80 Billion 2015 - \$14.00 Billion
Japan	2008 - \$2.40 Billion 2015 - \$4.25 Billion
Rest-of-World	2008 - \$2.90 Billion 2015 - \$7.12 Billion

SEGMENT SHARE	
SEGMENT	2008
Insulin	45.7%
Non-Insulin	54.3%