

Belfast Telegraph Northern Ireland Business Awards 2011 in association with bmi

## EXCELLENCE IN TECHNOLOGY

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### Winner HeartSine Technologies

#### Winner

HeartSine Technologies

Belfast-based HeartSine Technologies designs, develops and manufactures automatic external defibrillators which can save the lives of those who suffer a sudden cardiac arrest.

More than 800,000 people across the world die every year from sudden cardiac arrest, which causes the heart to race and beat erratically but then stop, but a jolt of electricity from a defibrillator can shock the heart back into a normal rhythm.

An automatic external defibrillator works by analysing the heart's rhythm and determining whether action is needed before prompting the user to deliver a potentially life-saving shock to the heart.

HeartSine was founded in 1997 by Chief Technical Officer Professor John Anderson and a group of investors who wanted to place lifesaving technology in the hands of people who were not necessarily medical professionals.

Professor Frank Pantridge is credited with revolutionising cardiac treatment when his team working at the Royal Victoria Hospital in Belfast invented the portable defibrillator in the early 1960s

Professor Anderson had joined his team in 1967 to lead design efforts to further develop the mobile defibrillator. Although the first mobile defibrillators weighed almost 50 kg and were difficult to move and awkward to operate they changed the way emergency care was delivered globally.

From developments in technology which improved efficiency and reduced the weight of the devices to patented algorithms for automatic defibrillators, Professor Anderson's work led to major advancements which are now used across the world in many defibrillator models.

Since HeartSine was founded the company has developed unique technologies which have patient care and saving lives at their core.

As 80% of sudden cardiac arrests happen outside a medical environment HeartSine defibrillators are specifically designed for lay users or those who have had minimal training.

Last year the company launched the HeartSine Samaritan PAD 500P with CPR advisor.

It is the first defibrillator in the world to give the user feedback based on cardiac output. It will tell them to push harder, faster or slower or reassure them they are performing good compressions.

This ensures the most effective CPR for the needs of the sudden cardiac arrest victim.

Rodney McAdam from the judging panel said: "The winner demonstrated the ability not only to develop technology to start the business but also to keep on developing the technology in a field where rapid change is the norm. Moreover, the company have successfully integrated their technology developments with business and market acumen to advance and grow the business."



#### Commended

Andor

Andor has a worldwide reputation for excellence in the global scientific digital camera market. The company is constantly investing in the research and development of cutting edge technology to maintain this reputation.

One of its most recent innovations is the Neo sCMOS camera platform, which featured at the annual meeting for the American Society for Cell Biology last year. It is used in a wide range of applications from low light imaging to confocal microscopy.

The sensor used in the camera was the result of many years research and development by Andor and other companies.

It is unique because it features include extremely low noise, rapid frame rates, a wide dynamic range, high resolution, a large field of view and high

quantum efficiency. It also makes use of Andor's UltraVac technology to ensure a longer product lifetime.

The company was founded in the 1980s when staff in the Physics Department of Queen's University Belfast found that the cameras available at the time were unable to keep up with their ever increasing demands.

They developed their own camera which was used in various imaging and spectroscopic applications. These initial cameras were so successful that they began to receive requests from researchers based in other departments at Queen's as well as further afield.

Andor Technology was set up in 1989, as a spin out company from Queen's, to take advantage of these opportunities.

Throughout the company's 22 year history Andor has been responsible for several firsts which have allowed its customers to record results in light measurements that were previously impossible to calculate.

The applications for Andor's products vary greatly – spectrometers have recently been used for remotely detecting explosive material while the iStar camera has been used to detect the hospital bug MRSA in less than 60 seconds.