NEWS RELEASE

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NTU dons' biomedical start-up receives US$7.5 million in funding
- Substantial funding from Silicon Valley and EDB to bring patented vascular stent technology developed in NTU to human trials

A biodegradable, drug-eluting vascular stent developed by two Nanyang Technological University (NTU) professors has attracted a sum of US$7.5 million (about S$12million) in funding from established investors.

The inventors of the stents, Professor Freddy Boey and Associate Professor Subbu Venkatraman, Chair and Associate-Chair of NTU’s School of Materials Science and Engineering, developed the proprietary technology over several years at NTU. They founded Amaranth Medical Pte Ltd in 2005 with the vision of advancing their invention from the lab to the bedside. The company was granted a worldwide exclusive licence to this technology from NTU.

Today, the professors are one step closer to achieving that vision as their company announced the closing of a US$7.5 million Series A financing co-led by Charter Life Sciences of Palo Alto, California and Bio*One Capital of Singapore, via Amaranth’s holding company in the U.S., Amaranth Medical Inc. (Please refer to fact sheet for details of Amaranth).

The financing will be used to advance their invention to human clinical trials, which is expected to be in 2007. Human trials are an essential step toward attaining FDA approval. With FDA approval, the products can then be produced and sold commercially.

The proprietary technology of creating biodegradable drug-eluting vascular stents was developed over several years by a team of researchers led by Prof Boey and Assoc
Prof Subbu at NTU. The stents can be used to treat peripheral vascular disease (PVD), a major disease afflicting 12-20% of people over the age of 65 in developed countries.

The biodegradable stents offer a number of benefits over the metal stents currently in use today. These stents developed by the professors are self-expanding at body temperature, flexible, able to withstand multiple stresses and able to elute large quantities of different drugs in multiple directions to prevent restenosis and enhance vessel repair. Most importantly, with this fully degradable stent, there will be no permanent presence of a foreign object in the human body.

Professor Boey says, “I am especially pleased that a technology which has been wholly developed in Singapore has been able to attract substantial funding from an experienced Silicon Valley venture capital investor like Charter Life Sciences. I believe we are the first start up company from Singapore to be able to get such substantial funding in the initial stage.”

“With this funding,” he adds, “we are one step closer to getting the product to human trials, and subsequently to the market. The pay-off will be a better quality of life for the patients.”

Ms Chu Swee Yeok, CEO of Bio*One Capital stated: “Amaranth exemplifies how Singapore-grown companies with novel and innovative technology can leverage on the strong biomedical sciences capabilities and infrastructure available in Singapore and concurrently access the capital resources available in the US. Bio*One Capital is pleased to co-lead this financing round and play an important role in the growth and development of this company.”

Mr Fred M. Schwarzer, managing director of Charter Life Sciences who also serves as the chairman of Amaranth Inc., says, “We are very excited by the potential for Amaranth’s technology in the extremely large vascular stent market, including the near term potential to address the unmet medical needs of peripheral vascular disease. Innovative technology is being developed around the world, and we are pleased to be able to help develop this technology from Singapore for the benefit of patients worldwide.”

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About Nanyang Technological University

Nanyang Technological University (NTU) is a research-intensive university with globally acknowledged strengths in science and engineering. The university has a beautiful garden campus and a distinguished lineage with roots that go back to 1955.

NTU has 4 colleges, comprising 12 schools. The College of Engineering, with six schools focused on technology innovation, enjoys wide renown and currently ranks fourth in the world in engineering publications. The College of Science is at the forefront of Singapore’s life sciences and science initiatives, while the Nanyang Business School (which is the College of Business) offers one of the world’s top 100 MBA programmes. The College of Humanities and Arts boasts Singapore's first professional art school offering degree courses in art, design and interactive digital media, the Humanities and Social Science School, and the Wee Kim Wee School of Communication and Information, one of the best communication and information schools in Asia.

The 13th school, S Rajaratnam School of International Studies, will be inaugurated in 2007. An important component of this autonomous school is the Institute of Defence and Strategic Studies, long recognised as a world authority on terrorism.

NTU is also home to the internationally-acclaimed National Institute of Education, Singapore’s only teacher-training institute.

 Ranked among the top 50 universities in the world, NTU has in place multi-country programmes and initiatives with established institutions worldwide. Some examples of key partners include MIT, Stanford University, Cornell University, Caltech, University of Washington, Carnegie Mellon University; world-class universities in Asia such as Beijing University, Shanghai Jiaotong University, Waseda, IIT of India; and top European universities like Cambridge University, Imperial College, Ecole Polytechnique Fédérale de Lausanne, University of St Gallen, University of Technology of Compiegne and University of Technology of Troyes.

For more information, visit [www.ntu.edu.sg](http://www.ntu.edu.sg)

About Charter Life Sciences

Charter Life Sciences is a venture capital fund headquartered in Palo Alto, California which specializes in early stage life sciences investments:

For more information, visit [www.clsvc.com](http://www.clsvc.com)

About Bio*One Capital

Bio*One Capital is a leading, dedicated biomedical sciences investment management company in Asia with a worldwide presence. With funds of over US$600 million, investments are focused on promising and innovative global biomedical companies where Bio*One Capital can play a value adding role in bridging and supporting companies’ growth strategies in Asia through their operations in Singapore. A part of the Singapore Economic Development Board, Bio*One Capital oversees a portfolio of over 60 companies in US, Europe, Singapore and Asia. For more information, please visit [www.bio1capital.com](http://www.bio1capital.com)

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Fact Sheet

About Amaranth Medical Pte Ltd

Amaranth Medical Pte Ltd is founded in 2005 by Prof Freddy Boey and Assoc Prof Subbu S. Venkatraman. It is a spin-off from Nanyang Technological University.

Amaranth’s core technology involves proprietary methods of creating bio-degradable polymeric stents. The technology was developed by Prof Boey and Assoc Prof Subbu at NTU. The company has been granted a worldwide exclusive license to this technology by NTU.

Upon the closing of this financing, Amaranth Medical Pte Ltd became a wholly owned subsidiary of Amaranth Medical, Inc.

The company’s research, development and manufacturing facilities are located in Singapore, while the headquarters of the company are currently located in the offices of Charter Life Sciences in Palo Alto, California.

About the inventors

Professor Freddy Boey Yin Chiang is the Chair of the School of Materials Science & Engineering, Nanyang Technological University. (梅彦昌，南洋理工大学 材料科学与工程学院 院长)

He is Fellow of the Institute of Materials (UK) and Fellow of the Institute of Engineers Singapore. He is also Deputy President of the Materials Research Society, Singapore. Freddy is a board member of the Defense Science – NTU Temasek Laboratory. He is also an invited panel member of the Economic Development Board’s MediTech ‘s funding. He was a member of the Ministry of Education’s University Autonomy Framework panel and Academic Research Committee. He also sits in the ASTAR Public Sector Funding and the ASTAR Thematic Funding Committee, co-chairing the Thematic Funding on "Polymer & Molecular Electronics & Devices."

Freddy holds several patents that have been licensed to companies. He has started two companies for the Biodegradable Stents and the PZT Pump. He is also technical adviser and retainer consultant to several companies related to biotechnology and advanced materials. He chairs the Asia Pacific Conference on Materials Processing series, sits on advisory committees of several International Conferences in France, China and England and has been invited as a speaker to many conferences worldwide.

He has active collaboration with Montpellier University, CEA Saclay, Caltech, Mayo Clinic, AMR Inc. Toronto. He has also been invited as UNDP (IAEA) Fellow twice.

He has won major research grants totaling about US$3 million in the last 3 years and has published over 280 papers in the last 10 years, half in refereed quality journals such as...

**Associate Professor Subbu S. Venkatraman** is the Associate Chair at the School of Materials Science & Engineering (Research) at the Nanyang Technological University. He is also the Director of the University's Graduate & Research Programmes, and Deputy Director of the University's Biomedical Engineering Research Centre