

Nanotechnology Investment: Opportunities and Challenges

12:45 - 14:45, Nov. 14, 2010; Suzhou International Convention Center (complementary coffee/tea)

Co-organized by NanoGlobe Pte Ltd (www.nano-globe.biz) and China International Nanotech Innovation Cluster (www.chinanoforum.com)

Chaired by Dr Lerwen LIU (Managing Director of NanoGlobe)

The accelerated growth of Nanotechnology R&D in the past 10 years has been contributed by the increased and strategic investment from government funding agencies worldwide. In addition, private sectors have also played a vital role in nanotechnology investments enabling the fast growth of applications & products development and industry & market adoption. Similar to other emerging technologies, nanotechnology has enabled both incremental improvement and disruptive innovation in many industry sectors including energy, environment, water, medicine, electronics, automotive, aerospace, textiles, defense and others. Both public and private investors have been encouraged by the attractive business opportunities enabled by nanotechnology, but also have experienced frustration brought by some of challenges including regulations, technology, financial and business management, engineering, IP strategy, globalization, integration of different expertise, lacking of qualified and motivated manpower, gaps between R&D and industry needs and so on. This session brings together world leading government and private investors in nanotechnology to share their experience in nanotechnology investment and exit strategy and to address issues that are relevant to the success of nanotechnology enabled business.

Program

Time	Speaker	Job Title and Organization	Topic
12:45 – 13:00	Mr Jian-Jiang FEI	Executive Vice President of Suzhou Ventures Group (China)	Investing in High-tech Industry in China - Suzhou Ventures Group Experience
13:00 – 13:15	Dr Gerd Bachmann	Nanotechnology Expert Consultant to the Federal Ministry of Education and Research (Germany)	Public Investment in Nanotechnology in Germany
13:15 – 13:30	Mr Jim Von Ehr	President and Founder of Zyvex Corporation (USA)	Commercializing Nanotechnology - The Zyvex Story
13:30 – 13:45	Mr Marco Beckmann	CEO of Nanostart AG (Germany)	Growth Capital for Nanotechnology Start-ups: The Key to Success
13:45 – 14:00	Mr Russell L. Boltwood	Executive Vice President & General Counsel of Transpacific IP (Singapore)	Nanotechnology Commercialization: Key Considerations
14:00 – 14:45	Panel Discussion (Chaired by Dr Lerwen LIU)	Dr Lerwen LIU - Managing Director of NanoGlobe Pte Ltd (Singapore)	Opportunity and Challenges of Nanotechnology in Business and Investment

纳米技术投资：机遇与挑战 (会议专场)

2010年11月14日下午, 12:45-14:45; 苏州国际会展中心一楼展览大厅 (提供免费茶点)

该投资专场由新加坡纳米顾问公司NanoGlobe (www.nano-globe.biz) 和国家纳米技术国际创新园苏州纳米科技发展有限公司(www.chinanoforum.com) 联合组办

刘乐文博士 (NanoGlobe 有限公司董事总经理) 担任会议主席

得益于世界各国政府在资金上的持续投入及政策上的战略倾斜, 纳米科技研发在过去的十年间持续加速发展。与此同时, 私有资本则在加快纳米科技的应用性研究、产品研发、产业化以及市场培育等方面发挥着重要作用。与其他新兴技术一样, 纳米技术不仅给各产业带来高附加值, 也带给我们颠覆性创新。近年来纳米技术已经深入渗透到能源、环境、水资源、医药、电子、汽车、航空、纺织 和国防等产业领域。各国政府及私营企业既为纳米技术产业化所带来的无限商机所吸引, 欢欣鼓舞, 也经历了各种挑战及挫折, 例如政策法规的国家性差异, 纳米加工产业化, 知识产权战略, 全球化攻略, 多学科的整合, 专业化技术、财务及管理人才的短缺, 以及纳米技术研发与产业化之间的差距等等。本次纳米投资专场汇聚了纳米科技发展全球领先的国家机构代表及私人投资者精英, 分享他们在纳米技术的投资及撤资策略等方面的经验并深入探讨纳米产业化的制胜之略。

会议流程

时间	报告人	职务及工作机构	主题
12:45 – 13:00	费建江	中国苏州工业园创业投资公司常务副总裁	中国高科技产业投资战略 – 苏州创投经验之谈
13:00 – 13:15	Dr Gerd Bachmann	德国联邦教育及研究部纳米技术高级顾问	德国纳米技术投资战略
13:15 – 13:30	Mr Jim Von Ehr	美国 Zyvex 公司总裁 (创始人)	纳米科技产业化 - Zyvex 创新之路
13:30 – 13:45	Mr Marco Beckmann	德国纳米投资公司 Nanostart 首席执行官	纳米科技新兴企业成长资本 – 制胜之略
13:45 – 14:00	Mr Russell L. Boltwood	新加坡宇东公司执行副总暨法务长	纳米技术产业化: 关键因素
14:00 – 14:45	专题讨论 (主持人: 刘乐文博士)	刘乐文博士 - 新加坡纳米顾问公司 NanoGlobe 董事总经理	机遇与挑战 - 纳米商务及投资战略

Chair: Dr. Lerwen LIU (lerwen@nano-globe.biz), Managing Director of NanoGlobe Pte Ltd



Lerwen LIU is an Asia-based nanotechnology expert specializing in government and corporate strategic services to policy makers and corporate executives. She also specializes in business development and project management for leading nanotechnology companies in their global expansion of R & D, commercialization and market. Since 1999 she has been actively building nanotechnology networks with government agencies, R & D institutions and industries around the world, especially promoting nanotechnology policy and cooperation in the Asia Pacific region. She co-founded Asia Nano Forum (www.asia-anf.org, a nanotechnology society linking 15 Asia Pacific economies) and has been serving as the Secretary since 2004. She also founded the SingNano network, a platform for nanotech government, academic and industry leaders to collaborate and accelerate commercialization of R & D in Singapore. She builds strategic partnerships with government agencies, R & D organizations and industries Asia, North America and Europe and promotes nanotechnology policy, R&D activities, commercialization, and education to the micro/nanotechnology R & D and business community in Asia. Dr Liu recently was invited to be involved in United Nation and OECD nanotechnology initiatives particularly in the areas of energy and medicine and innovation development.

Dr Liu is a director of Zyvex Asia managing its operation in Singapore and the Atomic Precise Manufacturing Program (APM). She is a strategic advisor and a member of the Board of Directors of Nanostart Asia, and has been playing a vital role for setting up Nanostart AG's Singapore fund, investment and operation. She is the founding Managing Director of NanoGlobe, a leading nanotech consulting company based in Asia. She is an invited evaluation panel member for the Proof-of Concept (POC) grant scheme of the National Research Foundation (NRF) of the Singapore government and has been actively support Singapore government nanotechnology strategy and commercialization efforts.

She was on the advisory board of Nanotechnology Opportunity Report (NOR) published in March 2002 which is the first comprehensive global market report on nanotechnology and co-wrote one of the chapters `Nanotechnology Market and Company Report-Finding Hidden Pearls` with a team of experts from Deutsche Bank and University of Ulm in Germany, and the Nanotechnology Expert Committee of the Malaysian Government Researchers` Directory Exchange (REDEX).

Dr Liu has written (during 2003-2006) over 150 reports providing insights on nanotechnology policy, R&D and business trends in the Asia Pacific region. Her reports are available at the Asia Pacific Nanotech Weekly (APNW, www.nanoworld.jp/apnw) sponsored by the Nanotechnology Research Institute (NRI) of Japan National Institute of Industry Science and Technology (AIST). She published her first book titled "Emerging Nanotechnology Power-Nanotechnology R&D and Business Trends in the Asia Pacific Rim" May 2009.

Dr Liu has a PhD in physics specializing in many-body effects and transports in semiconductor nanostructures, and has conducted research work in Australia, Japan, USA and Italy. She is fluent in Chinese and English; reads technical Japanese and speaks conversational Japanese and Italian.

Dr Liu is an Australian citizen and currently based in Singapore.

会议主席： 刘乐文博士 (Email: lerwen@nano-globe.biz), NanoGlobe有限公司董事总经理



刘乐文博士是NanoGlobe有限公司董事总经理，也是国际知名的纳米技术亚洲专家，十多年来积极活跃在纳米科技领域，为政府决策层和企业主管提供纳米技术战略咨询服务。刘博士专长于项目管理及业务扩展，为国际领先纳米科技公司的国际化业务拓展，产品研发及市场推广等出谋划策。自1999年开始刘博士一直积极地构建产学研一体化交流平台，推动全球，尤其是亚太地区的政界，学术界和工商业界纳米领域从业人士在政策制订和纳米产业化方面加强交流与合作。刘博士与人共同创办了亚洲纳米论坛 (Asia Nano Forum, ANF, 现有成员包括亚太地区15个经济体) 并且从2004年迄今一直担任该组织的秘书长。她还创办了新加坡纳米技术协会 (SingNano)，旨在促进新加坡政界、学术界和工商业界的交流与合作并且加快科研成果的产业化进程。刘博士与亚洲、北美及欧洲的政界、学术界和工商业界纳米从业人士长期保持着良好的战略伙伴关系，在促进亚洲各国的政策推广，加强学术交流，加速纳米科技的产业化进程以及普及纳米教育等方面，做了大量工作。刘博士最近作为主讲人参加联合国亚太经济社会委员会 (UNESCAP) 举办的促进纳米技术的创新及产业应用研讨会，并且在经济合作与发展组织 (OECD) 主办的促进纳米能源和纳米生物应用研讨会上主持专家组讨论。

刘博士还兼任 Zyvex 亚洲分公司的业务经理，负责该公司在新加坡的日常运作并主管其原子精密加工制造研发项目 (APM)。她还任 Nanostart AG (纳米创投德国上市公司) 亚洲分公司的董事会成员及咨询顾问，对该公司在新加坡创建分公司，集资及运营起到至关重要的作用。刘博士一手创办了 NanoGlobe，亚洲领先的纳米技术咨询公司。刘乐博士一直积极推动新加坡纳米技术的战略发展及产业化进程而且被新加坡国家研究基金会 (National Research Foundation, NRF) 特聘为概念证明 (Proof of Concept, POC) 基金计划的评审组专家。

发表于2002年三月的《纳米技术前景展望》 (Nanotechnology Opportunity Report, NOR) 是第一份关于纳米技术的综合性全球市场调研报告，刘乐文博士时任该报告的咨询委员会成员并且与人合著了其中一章《纳米技术市场与公司报告—发现隐藏的珍珠》 (Nanotechnology Market and Company Report-Finding Hidden Pearls)，该咨询委员会的专家主要来自于德国德意志银行和乌尔姆大学以及马来西亚研究《交换目录》 (Directory Exchange, REDEX) 的纳米技术专家委员会。

在2003到2006年期间，刘博士共发表了超过150份报告来探讨关于亚太地区纳米技术的政策、研发和市场前景。这些报告发布在亚太纳米技术周刊 (APNW) 上，该周刊由日本产业技术综合研究所 (AIST) 下属的纳米技术研究所 (NRI) 赞助发行。2009年5月，刘博士出版了她的第一本著作《新兴纳米技术—亚太区纳米技术的研发及发展趋势》。刘博士是物理学博士，并且在澳大利亚，日本，美国和意大利从事科研工作多年。刘乐文博士精通英语和汉语，可以阅读日文文献并且可以胜任日文及意大利语的日常会话。

刘博士是澳大利亚公民，目前居住于新加坡。公司总部也设于新加坡。

Speakers' Profile

Mr. Jianjiang FEI is Executive Vice President of Suzhou Ventures Group, as well as co-chairman of Infinity I-China fund.

Mr. Fei was the former Deputy Director of the China Construction Bank, SIP Sub-branch and the Shanghai Pudong Development Bank, SIP Sub-branch. As a founding member of CSVC, the predecessor of Suzhou Ventures Group, Mr. Fei has been served in various high level management positions including CFO, VP of Investment, and GM of Guarantee Company.



He has led investments and served as a Director on the boards of many companies including Snailgame, Wus Kunshan, Peptalk, CentecNetworks, Itibia echnologies, WLSCP and MASQ Interactive.

Mr. Fei is still sitting in the BOD of Chiral Quest Inc, Grad Technologies as chairman.

More information about "Suzhou Ventures Group" can be found at:

<http://www.csvc.com.cn/svgweb/default.aspx>

费建江先生是苏州创业投资集团的常务副总裁，也是华亿基金的联合主席。

费先生担任过中国建设银行和上海浦东发展银行苏州工业园区分行的副行长。之后，费先生作为中新苏州工业园区创业投资有限公司（苏州创业投资集团前身）的创始人之一，出任多个高级管理职位，包括 CFO、主管投资业务的副总裁、担保公司总经理等。

他为许多公司包括蜗牛游戏、沪士电子、盛科网络、网经科技、广达友讯、晶方半导体、幻城网络等引入投资并担任公司董事。

目前，费先生还担任着凯瑞生化、智瑞达科技的董事会主席。

Dr Gerd Bachmann is a Nanotechnology Expert Consultant to the VDI Technologiezentrum GmbH, Federal Ministry of Education and Research. Dr. Bachmann studied physics at the University of Kaiserslautern. He was engaged several years in the department of physics at the University of Kaiserslautern as scientist, mainly concerned with surface analytical questions for SMEs.



Since 1991 he works as a consultant in the Future Technologies Division of the VDI Technologiezentrum GmbH (VDI-TZ), Düsseldorf in commission of the German research ministry (BMBF), combining funding tasks with forecasting and assessment topics. He is a prime strategy advisor for the BMBF nanotechnology funding initiative. These activities include engagement in the analysis and valuation of future technologies - mainly in the areas nanotechnology, nanobiotechnology, x-ray technologies and lithography - discussion and development of topics with national importance, assessment of projects and actors, and supporting transfer processes along the way from scientific findings to prototypes and to applications.

In the nanotechnology area Dr. Bachmann works on strategies for promoting innovation possibilities via funding and networking activities and how to strengthen value-added processes via accompanying measures. As an advisor he was strongly involved in the formulation of the German, Nano-Initiative - Action Plan 2010“ as part of the governmental Hightech Strategy. In his work for the BMBF he is also involved in discussions about international cooperation in nanotechnology and in the strategic development of governmental internationalization efforts.

Topic: Public Investment in Nanotechnology in Germany

Abstract: The topics and strategies of the German funding activities for nanotechnology have remarkably changed in the last 15 years. While first BMBF projects at the end of the 80ies were mainly basic science oriented, newer public investments had a much higher application orientation and are performed today in joined industry-science cooperation, in socioeconomic driven leading edge innovations or in nationally important innovation alliances with main technological stakeholders.

Because Germany is strongly dependent on industrial success in future markets, the government created in 2006 the Hightech-Strategy, addressing goals in societal important areas like medicine, climate, energy, environment, mobility and communication. Germany should be enabled to compete on the future world markets via a coordinated innovation policy. This implies also a learning society and responsible acting. Nanotechnology is seen as an important field for strengthening of existing strengths. To comprehensively use these potentials for Germany and to set up continuous value-added chains the eight Federal Ministries for Labour and Social Affairs (BMAS), Environment, Nature Conservation and Nuclear Safety (BMU), Food, Agriculture and Consumer Protection (BMELV), Defense (BMVg), Health (BMG), Commerce and Technology (BMWt) and Transportation, Building and Urban Affairs (BMVBS) together with the BMBF have concentrated their activities in the frame of the “ Nano-Initiative - Action Plan 2010” on 5 activity areas:

1. Opening up future markets - introducing new sectors
2. Improving general conditions
3. Behaving in a responsible manner
4. Informing the public
5. Identifying the future demand for research

Without doubt, the economic importance of nanotechnology lies in its pacemaker function. As an enabling technology it is very early decisively important in the value chain to enhance new production possibilities and to create new materials for to lay the basis for intelligent components and powerful products. Germany is seen as a strong candidate related to basic nanotechnological science. But also the industrial preconditions for the transfer of results into products is quite good with the existing about 900 companies, dealing with the development, application and commercialisation of products based on nanotechnological findings.

In the last 15 years nanotechnology funding was mainly done by the BMBF and by institutional funding organisations. Mid of the 90ies the BMBF changed its viewpoint from seeing nanotechnology not only as a bundle of single technologies, but to realise, that this discipline overlapping and crosscutting field has a broad innovation impetus on nearly all economically important branches and on many societal topics. Hence the funding amount has been increased since the early 90ies by more than a factor of 10 to about 165 Mio. Euro in 2009. In the last years more and more support from other resorts could be recognised. In addition there is

funding from institutional bodies and an increasing part from the individual states. Overall the public investment for nanotechnological R&D amounts to about 440 Mio Euro annually.

The government has also set up comprehensive accompanying measures to improve the knowledge of the interested public about the chances, but also about the possible risks of nanotechnology, and to initiate an intensive dialogue with all societal stakeholders. This is an important prerequisite to establish trustful markets. Especially the BMBF counted very early on an open and active risk communication. One important tool is the nanotruck-initiative, which reaches since years more than 100.000 visitors of this interactive mobile information centres. Furthermore, brochures, internet portals, CDs, videos, stakeholder dialogues, consumer conferences and educational supplements were used to explain the technological contents to the citizens, to give appropriate information to pupils and to highlight qualification possibilities. In addition, the BMBF has heavily increased its funding engagement for the investigation of (eco-) toxicological influences.

More information about “Nanotechnology in Germany” can be found at:

www.bmbf.de/en/nanotechnologie.php

<http://www.research-in-germany.de/nanotechnologies>

www.bmu.de/english/nanotechnology

www.nanonet.de

James R. Von Ehr II is the Founder and Chairman of the Zyvex group of companies: Zyvex Performance Materials, Zyvex Labs, and Zyvex Asia.



Mr. Von Ehr is recognized as a respected leader within the nanotechnology industry and speaks frequently at industry conferences worldwide. He founded the Texas Nanotechnology Initiative and the Feynman Grand Prize in Nanotechnology. His significant gift established the University of Texas at Dallas NanoTech Institute. He has also endowed the James Von Ehr Distinguished Chair of Science and Technology at UTD, held by the late Nobel Laureate Alan G. MacDiarmid (Chemistry Prize in 2000). In 2006, he endowed the James Von Ehr Scholars program at Michigan State University, funding scholarships for 16 engineering undergrads.

Mr. Von Ehr was named an Ernst & Young Entrepreneur of the Year in June 2003. In 2004, he was named Distinguished Alumni of both Michigan State University and The University of Texas at Dallas. In 2004 he received the Richardson Chamber of Commerce’s Economic Development Leadership Award. In 2006, he received the Claud Erickson Award, MSU’s highest Engineering Alumni award, as well as MSU’s Computer Science and Engineering Distinguished Alumni Award. He holds 6 patents in software and nanotechnology.

Mr. Von Her has a Bachelor of Science Degree in Computer Science from Michigan State University in 1972 and a Master Science Degree in Computer Science from University of Texas at Dallas in 1982.

Topic: Commercializing Nanotechnology - The Zyvex Story

Abstract: Zyvex is the first molecular nanotechnology company, with a vision of developing adaptable, affordable, and molecularly precise manufacturing. Zyvex Founder Jim Von Ehr will discuss Zyvex’s progress

towards this ambitious goal of creating “digital matter.” Highly engineered nanomanufacturing systems built with atomic precision will revolutionize how we make products ranging from construction materials to computers to medicine. In February, 2010, Zyvex Instruments’ business (nanoprobng solutions for the semiconductor industry) was purchased by DCG Systems. The other Zyvex Group companies remain independent: Zyvex Performance Materials (high performance nanomaterials for the sporting goods and defense industries); Zyvex Labs (developing Atomically Precise Manufacturing); and Zyvex Asia (commercializing nanomanufacturing in Singapore).

More information about “Zyvex” can be found at: <http://www.zyvex.com/>

Marco Beckmann is one of the world’s leading experts in the area of nanotechnology investment. Mr. Beckmann was the first to seriously explore the implications of nanotechnology for the global capital markets. He is the author of three books (in German) on the subject of nanotechnology investing.



In 2001 he published the world’s first book on the subject of equity investment in nanotechnology, followed by a second book which in 2002 was the most successful German-language book on this subject.

While still in university, Mr. Beckmann began his professional career as a sub-advisor at the Hauck & Aufhäuser DAC Nanotech Fund, an internationally invested equity fund specializing in nanotechnology. In late 2003 he founded Nanostart AG, since which time he has served as its chief executive officer.

In just a few years, he has built Nanostart into the world’s most successful venture capital provider specializing in nanotechnology. Mr. Beckmann has managed to build not only an international portfolio of investment holdings but also to initiate a global base of operations managed from the company’s headquarters in Frankfurt, the financial capital of Germany. Today, the portfolio companies owned by Nanostart span Europe, the U.S. and Asia, enabling it to participate in the rapid growth of nanotechnology around the globe. With five successful IPOs of its portfolio companies to date (including both NASDAQ and the Frankfurt Stock Exchange) as well as two trade sales of investment holdings to major corporations (most recently, to global pharmaceutical leader Roche), Marco Beckmann and his team at Nanostart can point to an unparalleled track record of success in the emerging nanotechnology sector.

In addition to his role as CEO and sole executive board member of Nanostart AG, Marco Beckmann also serves as director of Nanostart Asia Pte Ltd, a subsidiary established in Singapore in April 2008 to manage the company’s investment activities throughout the Asian region. He is likewise director of VentureTech Equity-Partners GmbH, an investment company which was acquired in its entirety by Nanostart AG in October 2005. In addition, Mr. Beckmann serves as chairman of the supervisory board of ItN Nanovation AG, an exchange-listed portfolio company based in the southwestern German city of Saarbrücken, and as member of the board of directors of Lumiphore, Inc., a nanotechnology company located in Redwood City, in the heart of California’s Silicon Valley.

As the author of numerous articles and columns in international journals, Mr. Beckmann has drawn considerable attention to the economic potential and broad range of opportunities presented by nanotechnology.

He is a regular speaker at international nanotechnology conferences and has delivered more than 100 presentations and lectures on the subject to date.

Topic: Growth Capital for Nanotechnology Start-ups: The Key to Success

Abstract: Growth capital or venture capital is an important source for young nanotechnology companies to reach market success. It shows significant advantages compared to other forms of financing, especially banking loans. Nanostart AG invests in young, up-and-coming nanotechnology companies throughout the world. These companies seek to commercialize highly innovative products or processes, or are approaching market launch. Nanostart invests with growth (venture) capital and with “human capital”, making its management and commercialization know-how available to its portfolio companies. In the area of commercialization this active support is often the key to success for scientific companies. They also profit from Nanostart’s extensive global network.

Before investing in a company, Nanostart conducts a thorough due diligence examination. Of particular importance are the company’s technology, patent situation, market potential, and most of all, the personal qualities and professional track record of its management. Nanostart currently partners nine companies worldwide in its investment portfolio. Founded in 2003 Nanostart has built a track record of 8 successful exits which is unrivalled by any other nanotechnology investment company. It has to date brought five of its holdings to the stock market, with two successful exits through trade sales and one exit through an asset sale.

More information about “Nanostart AG” can be found at: <http://www.nanostart.de/>

Mr. Russell Boltwood is Executive Vice President and General Counsel for Transpacific IP Management Group Pte., Ltd., the leading intellectual property acquisition, portfolio management and consulting firm in the Asia Pacific Region. Prior to joining Transpacific, Russell was Of Counsel for the San Francisco-based law firm of Dillingham & Murphy, LLP, where he advised large, mid-sized and emerging companies in regard to corporate, venture capital, transactional, intellectual property and business development matters, with an emphasis on matters relating to China, Brasil, and other emerging economies. Prior to Dillingham & Murphy, Russell was General Counsel for UTStarcom, a NASDAQ-traded telecommunications equipment company, where he oversaw the company’s initial public offering in 2000. Russell holds a B.A. in Economics from the University of California, Berkeley, a J.D. from Golden Gate University in San Francisco, and is a graduate of the Executive Program at Stanford University's Graduate School of Business in Palo Alto, California. A licensed attorney, Russell is also recognized as a Certified Licensing Executive (CLE) by the Licensing Executives Society (LES), and is the author of several published articles regarding intellectual property, corporate governance and competitive intelligence matters. Russell lives and works in Singapore.



Topic: Nanotechnology Commercialization: Key Considerations

Abstract: Mr. Russell Boltwood will provide an overview of common monetization strategies for nanotechnologies, including a discussion of key success factors and pitfalls related to commercializing nanotechnologies. Special attention will be paid to IP licensing strategies, including reference to notable examples of nanotechnology monetization transactions.

More information about “Transpacific IP” can be found at: <http://www.transpacific-ip.com/>