

PREFACE

I have been involved in the world of nanotechnology in Asia for nearly 15 years engaging both in scientific research and in monitoring and analyzing government policy, research and development and industry trends in the field. I am now keen to share some insights into what is currently happening in this exciting part of the world.

I received my introduction to nanoscience in 1992, completing a PhD at the University of New South Wales and subsequently moving to Japan in 1995 to pursue my postdoctoral studies. In 1999 I started concentrating on analysing nanotechnology policy, R&D and industry trends. At this time, nanotechnology was still a relatively small field with few coordinated government funding programs and minimal investment by industry except in the advanced economies such as Japan, Germany, UK and USA. However, after President Clinton announced the US National Nanotechnology Initiative in 2000, the field has undergone profound changes especially in the Asia Pacific region. Public and private funding in nanotechnology has increased more than tenfold and the number of people working in industry and academia has also increased significantly.

Whereas Japan, a developed economy, has long been a leader in nanotechnology R&D and commercialization in this region, since 2003 developing economies such as Thailand and Vietnam have also started to pursue nanotechnology. Even Indonesia has started to become more active in this field and will launch a major nanotechnology initiative in 2009.

Over the last 10 years, I have been conducting research into government policy, R&D and industry trends through site visits, participating in major nanotechnology events and interviewing government policy makers, distinguished scientists, industry leaders and

investors. I have been involved in organizing various business events in China, Hong Kong, Indonesia, Japan and Malaysia to promote nanotechnology policy, commercialization and outreach.

Although my main focus has been the Asia Pacific region, I have also been involved in other parts of the world, including the US and Europe. During this time I have had the privilege of working with some of the finest minds and most notable people in the field. One of my earliest mentors was Dr David Kahaner (known, widely, as Mr Asia), who provided me with my first introduction to the world of technology analysis through the Asian Technology Information Program (ATIP) and provided me with advice that has served me well over the years.

Other significant collaborators include the Director of Japan's Atom Technology Program, Dr Kazunobu Tanaka, who has been playing a significant role in developing nanotechnology policy and international strategy in Japan. Also Mr Yuji Tokumasu, who was the nanotechnology planning director during 2001-3 at the Japan Ministry of Economy, Trade and Industry, has provided valuable insights to me in the world of government policy.

Another important figure in nanotechnology in Japan is Dr Hiroshi Yokoyama, with whom I collaborated to create the Asia Pacific Nanotech Weekly (www.nanoworld.jp/apnw) which, since January 2003, has provided a forum for my weekly reports on nanotechnology developments worldwide, mostly covering micro- and nanotechnology policy, research, development and industry trends in the 13 economies reviewed in this book plus USA and Europe.

I have also had the privilege of exchanging information and thoughts on nanotechnology global development with the Chair, Dr M.C. Roco, and Executive Secretary, Dr J.S. Murday, of the Interagency Working Group on Nanoscience, Engineering and Technology (IWGN) at the US government.

I am very fortunate to have the opportunity to work with one of the world's best and respectful nanotechnology foresight experts Dr Gerd Bachmann (VDI, Germany) who always generously shares with me the European nanotechnology development insights and makes me realize there is always so much I don't know.

One of my passions is to bring people together to make a difference. I am extremely grateful to two of the best minds in Asia Dr Hiroshi Yokoyama and Dr Kazunobu Tanaka (one of the contributors to this book), who have shared with me insights into Japan's nanotechnology development and with whom I co-founded the Asia Nano Forum (asiaanf.org) in 2004. This network was established to facilitate collaboration amongst Asia Pacific economies in promoting nanotechnology advancement in the region. Today ANF is a society consisting of a network of members who are the drivers of their own economy's nanotechnology strategy and R&D, and has grown into a successful regional society network especially in supporting education and training of manpower, and standardization and risk management.

Asia is currently the part of the world experiencing the fastest economic growth, with nanotechnology promising to play a significant part in future growth. However, it is not always easy to collaborate successfully in this part of the world due to differences in language and in the culture of disseminating information. This book is intended to fill in some of the information gaps and help advertise the potential provided by nanotechnology in the Asia Pacific region. It summarizes the efforts of thirteen economies in pursuing nanotechnology and their determination to be world leaders in the industry and economic development in the 21st century.

This is the first book to provide a comprehensive view of the Asian capabilities in nanotechnology and should interest government policy makers, academics, industry leaders and investors who are keen to develop opportunities in Asia.

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