Table of Contents

Preface .......................................................................................................................... V

Part I: The Chemical Industry .................................................................................... 1

1 The Global Chemical Industry ............................................................................... 3
   Gunter Festel
   1.1 Some Basic Facts About the Chemical Industry ........................................... 3
   1.2 Transformation of the Chemical Industry ...................................................... 4
   1.3 Impact of Industrial Biotechnology ................................................................. 7

2 The Petrochemical Industry in China ..................................................................... 9
   Jörg Wutke
   2.1 Major Players in the Chinese Chemical Industry ......................................... 9
   2.2 Underpinning Economic Growth and the Energy Bottleneck ...................... 10
   2.3 Outlook for Feedstock Supply ....................................................................... 13
   2.4 Cracker Capacity Development .................................................................... 14
   2.5 Consumption of Ethylene and Its Derivatives ............................................. 15
   2.6 WTO Entry and its Impact on China's Petrochemical Industry ................... 18
   2.7 Competitive Environment in the Chinese Market ....................................... 19
   2.8 Summary and Outlook ................................................................................. 22

3 Activities of European Chemical Companies in China ....................................... 23
   Heinz Mueller
   3.1 Executive Summary ....................................................................................... 23
   3.2 Activities in China ......................................................................................... 24
   3.3 Investment in China ....................................................................................... 27
   3.4 Focus on Subsegments .................................................................................. 30
   3.5 Effects of Investment and Positioning on Sales .......................................... 37
   3.6 Selected Chemical Companies in China ..................................................... 39

4 Research and Development in China ................................................................. 47
   Gunter Festel, Harald Pielartzik and Martin S. Vollmer
   4.1 Scope and Structure of R&D in China ............................................................. 47
   4.2 R&D by Foreign Chemical and Pharmaceutical Companies ...................... 50
   4.3 Conclusion and Outlook .............................................................................. 52

5 Chemical Industry Parks in China ..................................................................... 53
   Gunter Festel and Yong Geng
   5.1 Industrial Parks and Their Infrastructures ................................................... 53
# Table of Contents

## Part I: Chemicals for China’s Chip Industry

6 Trends in the Chinese Fine Chemicals Market – Opportunities and Threats for the European Fine Chemicals Industry

- 6.1 General Introduction to the Fine Chemicals Market
- 6.2 The Chinese Fine Chemicals Industry and Recent Developments
- 6.3 Scenarios for Future Developments
- 6.4 Opportunities and Threats to the European Fine Chemicals Industry
- 6.5 Conclusion

7 Chemicals for China’s Chip Industry

- 7.1 The Semiconductor Industry – Market Growth
- 7.2 Technological Innovation in the Microchip Industry
- 7.3 Electronics Chemicals and Semiconductor Manufacturing
- 7.4 Semiconductor Industry to Get Boost in China
- 7.5 China Promises Great Potential, but Plenty of Pitfalls
- 7.6 Electronics Chemicals in China

## Part II: The Pharmaceutical Industry in China

8 China’s Pharmaceutical Market: Business Environment and Market Dynamics

- 8.1 Introduction
- 8.2 Business Environment for the Pharmaceutical Industry in China
- 8.3 Market Characteristics and Dynamics of China’s Pharmaceutical Industry
- 8.4 Conclusion and Outlook

9 Developing the Pharmaceutical Business in China – The Case of Novartis

- 9.1 Changing Pharmaceutical Environment in China
- 9.2 Novartis Pharma in China
- 9.3 Strategic vs. Potential Regions in China
- 9.4 Analyzing the Pharmaceutical Business Environment
- 9.5 Conclusion
Table of Contents

10 China’s Approach to Innovative Pharmaceutical R&D: A Review .......... 121
    David E. Webber
    10.1 Chinese Pharmaceutical R&D – Current Status ......................... 121
    10.2 Government Agencies Driving Biopharmaceutical R&D .................. 124
    10.3 Factors Important in Country Competitiveness in
        Pharmaceutical R&D ........................................ 126
    10.4 Collaboration with the Multinational Pharmaceutical Companies ...... 129
    10.5 Conclusion .................................................................. 131

11 Foreign Direct Investment by Multinational Corporations
    in China – The Pharmaceutical Sector ........................................... 133
    Xiangdong Chen and Guido Reger
    11.1 Introduction .................................................................. 133
    11.2 Foreign Direct Investment (FDI) in the Pharmaceutical Sector
        in China: Trends and Structures ......................................... 133
    11.3 Technology, Patents and Foreign Direct Investment in China
        by Multinational Pharmaceutical Companies ............................ 143
    11.4 Conclusions .................................................................. 146

12 Competing in the Chinese Antibiotics Market – Cephalosporins
    1982-2000 ............................................................................ 149
    Gail E. Henderson and William A. Fischer
    12.1 Cephalosporins and China ..................................................... 149
    12.2 The Business of Antibiotics in China, Early 1980s ....................... 150
    12.3 Market Changes from the Mid-1980s ....................................... 151
    12.4 Characteristics of the Chinese Market for Cephalosporins:
        Late 1990s .................................................................. 153

Part III: The Experience of Successful European
    Companies in China .................................................................... 157

13 Swimming Ahead of the Shoal – The History of BASF
    in Greater China ..................................................................... 159
    Andreas Kreimeyer
    13.1 The Founding of BASF ....................................................... 159
    13.2 A Partnership Sealed by Colors ............................................ 160
    13.3 The Two World Wars ....................................................... 161
    13.4 The Postwar Era ............................................................. 161
    13.5 Towards the Future ......................................................... 167
# Table of Contents

14 Establishing a Competitive Production Network in Asia

Otto Kumberger

14.1 Asia – Shaping the Future of the Chemical Industry

14.2 BASF’s Production Philosophy

14.3 Using BASF’s Verbund Concept to Shape New Sites in Asia

14.4 BASF’s Investments in Asia-Pacific

14.5 Cultivating the Best Team in Asia-Pacific

15 Bayer – A Multinational Committed to China

Elmar Stachels

15.1 Bayer in China

15.2 Bayer’s Core Competencies

15.3 A Strategy for Growth

15.4 Summary and Outlook

16 Bicoll – The First Sino-German Biotechnology Company

Kai Lamottke, Nicole Feling and Christian Haug

16.1 Considerations for a Chinese Site

16.2 Starting from Scratch in Shanghai

16.3 Outlook

17 Clpa Specialty Chemicals in China – Global Direction and Local Expertise

Kuno Kohler

17.1 History

17.2 Industries We Serve

17.3 Business Environment

17.4 Strategic Priorities

17.5 Future Development

18 Degussa: Transforming the China Region

Eric Baden

18.1 Early Mover

18.2 Why China, Why Now?

18.3 The Holding Company – Dinosaur or Dragon?

18.4 As Decentralized as Possible – As Centralized as Necessary

18.5 Sourcing China – A Profitable Growth Market

18.6 Growth

18.7 The Other Side of the Medal

18.8 Conclusion
19 A Toolbox for China – Lessons from the China Experience of Degussa Construction Chemicals .................................................. 221
  Boris Gorella and Christian Kober
    19.1 Riding the Swift Juggernaut ............................................ 221
    19.2 Five Key Issues Facing Foreign Businesses in China .......... 225
    19.3 The Road Ahead ............................................................ 245
    19.4 The Take-Away ............................................................. 245

20 DSM in China: In Touch with Evolving Needs in the Specialty Chemicals Market ......................................................... 247
  Stefan Sommer
    20.1 Introduction ................................................................. 247
    20.2 Royal DSM – From Coal to Biotechnology ....................... 247
    20.3 The Early Years of DSM in China ..................................... 251
    20.4 The 1990s and the New Millennium ............................... 252
    20.5 DSM and China in the Asian Century .............................. 259
    20.6 China and DSM – Managing the Future ......................... 260
    20.7 Conclusion ................................................................. 263

21 Vitamins – Opportunities and Challenges for Both Western and Chinese Producers ....................................................... 265
  Manfred Eggensdorfer
    21.1 Vitamins Are a Dynamic Market ..................................... 265
    21.2 Vitamins Require a Complex Production Set-Up ............... 266
    21.3 New Entrants Result in a Competitive Environment .......... 266
    21.4 New Breakthrough Technologies Impact Competitive Position 269
    21.5 Product Forms Are an Additional Differentiator ............. 270
    21.6 Summary and Outlook .................................................. 272

Authors .................................................................................. 273

Literature ............................................................................... 287

Index .................................................................................... 291
The Chemical and Pharmaceutical Industry in China
Opportunities and Threats for Foreign Companies
Festel, G.; Kreimeyer, A.; Oels, U.; von Zedtwitz, M.
(Eds.)
2005, XII, 296 p., Hardcover
ISBN: 978-3-540-22544-7