

FIVE QUESTIONS FOR ...



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Dr. Rolf Schmid

Dr. Rolf Schmid studied chemistry at Munich University and biochemistry and microbiology at the University of Freiburg, completing his PhD in 1970. After research stays at the CNRS in Gif-sur-Yvette and Texas University in Austin, he joined Henkel KGaA in Düsseldorf, where he was responsi-

ble for building up the biotechnology R&D of the company. In 1987, he became head of the Division of Enzyme Technology at GBF, associated with a professorship at the University of Braunschweig. In 1993, he moved to the University of Stuttgart where he retired in 2009, with an MBA from Reutlingen University. Rolf Schmid has always been much interested in the scientific landscape of Asian countries, particularly Japan and China, analysing the development of biotechnology in Japan and China, combined with research stays in both countries. As an emeritus, he founded Bio4Business in Stuttgart, where he advises about access to Asian technology (www.bio4business.eu). We are delighted to present this very active scientist to you!

What memories do you keep from your time at HZI, back then still the GBF?

In 1987, the GBF was undergoing major upheavals that also offered numerous opportunities. Under Joachim Klein as the scientific and Helmut Zeitträger as the administrative director, new divisions emerged, new division heads were appointed and the infrastructure was modernised. To give just one example, Dietmar Schomburg introduced protein design and bioinformatics and was ahead of his time with “big data” by establishing the enzyme database BRENDA. The teams of Wolf Deckwer, John Collins and Kenneth Timmis generated a lot of “fresh wind”, and I was able, with my own great team, to establish a new focus on biosensorics and enzyme technology. This work made us and the GBF better known internationally. It was a golden time, and the political developments of those years leading up to German unity have remained in my memory. They led to more intensive exchanges with sister institutions in the former GDR, and I remember exciting joint colloquia in the GDR under the supervision of a “Polit-Kommissarin” followed by a German-German dance event without supervision...

Meanwhile, you are actively engaged in the science and technology landscape in Asia, providing advice on cooperation. Where does your fascination for research in these countries come from?

When I came to the GBF at that time, we were all looking spellbound at the rapid economic and scientific rise of Japan and made numerous contacts there, through bilateral workshops and the exchange of scientists. I maintained this focus in Stuttgart and even today have a good network in Japan. Meanwhile, China has taken the lead in many developments in Asia, and I was able to establish close working contacts with institutes of the Chinese Academy of Sciences and with universities such as Nanjing Tech and Tsinghua University. These connections have stayed with me, and I rejoice to see China develop with a focus on science and technology.

How would you describe the development of biotechnology in China or Japan compared to European countries such as Germany?

For resource-poor Japan, fermented food products and enzyme technology have been a central field of research for over 100 years. This expertise has since been built in re-



Participants of the „Biosensor International Workshop” in front of the Herzog-August library in Wolfenbüttel, July 1987 © GBF

source-rich China as well, with an incredible scientific and technological potential of over 5 million academically trained researchers, many with extensive experience abroad. What I like about both countries is their great scientific curiosity, tireless perseverance and pragmatism in solving problems. This does not speak at all against the achievements of German biotech. However, I have the impression that we do not always pay sufficient attention to impulses coming from those two countries.

Can you give an example of a project in the Asian research landscape that you consider particularly promising?

Japan strives to become the world’s leading bioeconomy. It is currently putting significant investment into industrial process development based on plants or microorganisms optimised by genome-edited “smart cells” - in other words, topics from the former GBF. Another big topic is medical cell technology using induced pluripotent stem cells. China also

has a bioeconomy strategy. The focus is primarily on better healthcare, but also on breeding research for food security and defense against epidemics. China is also catching up in basic research - just think about the idea of using a cell-free system to produce starch from CO₂ in quite decent yields.

What advice would you give to young scientists at HZI who are at the beginning of their career?

The Asian region accounts for about 50% of the world’s population and GDP. North Asian countries such as Japan, Korea and China have developed excellent resources for biotechnology R&D and, as “old nations”, also offer many cultural incentives. Nowadays it is easier than ever to move into this space, either virtually or in person, which is different in terms of language, writing and behavioral norms, and thus to enrich one’s own knowledge. Asian friends are for a lifetime, and aging is rather a privilege in Asia! Therefore, it is attractive in many respects to make and keep good contacts there.



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