Profile Hubert Schmidbaur

Hubert Schmidbaur, professor emeritus at the Technische Universität München, will celebrate his 80th birthday on December 31, 2014. His friend and colleague Helgard Raubenheimer asked him a few questions:

1. Hubert, in your career of over half a century in research you have produced a staggering number of high impact articles.* How did you achieve that? Did your work intrude much on your private life?

   Many colleagues have a similar record, achieved in many different ways. In my case I think the answer is that first of all one has to be well-organized, putting things in the right order and then attend to them without delay. In that way a lot can be done, and one does not need to cut down significantly on other activities, because one even may save time and energy. Another important point is that I simply liked immensely what I was doing, and because this was probably obvious and often infectious to all those who worked with me, everybody joined in to get things done quickly and efficiently, but without loss in quality.

2. What are your major achievements as a chemist?

   Probably to bring gold chemistry to the attention of the research community. However, when areas like heterosiloxanes in silicon chemistry, ylides in phosphorus chemistry, or the role of magnesium and beryllium in bioinorganic chemistry, were on the agenda, the results also had a message for a broader readership. I found working in various fields at the same time, or on one after the other with overlapping periods, to be of a great advantage: a cross-fertilization effect played itself out. We always remained in a given field long enough, but not too long, and played with about half of the elements in the periodic table.

3. Your affinity for the element gold is well documented. Are further discoveries in gold chemistry

still possible after the enormous activity of the past two decades?

Some areas of gold chemistry have now probably had their share of the limelight for the time being. Yet, in the field of surface and nanoscience, in medicine and pharmacy, there are as yet no limits, and further significant developments can be expected. Heterogeneous catalysis with gold catalysts will become more controllable, but homogeneous catalysis by gold compounds, which generally starts with extremely energy-rich substrates like alkynes or allenes, may be more limited in its applications and confined to the fine chemicals industry.

4. When you started your research career half a century ago, most inorganic and organometallic chemists were making new compounds and characterizing them. How has the focus changed?

   The worldwide science community has become more demanding. Just to make a compound that is not really telling you something new is now considered a waste of time. The call for relevance and applicability is legitimate. Our work on silicon and on phosphorus chemistry was always quite close to current industrial needs and projects. Likewise, our studies of magnesium complexes of amino acids eventually led straight to a commercial product. For all this work we gratefully enjoyed some funding from industry, but we were much less dependent on this support, because a chair of chemistry was well endowed with university funds allowing us to build and maintain a sizeable research group working mainly on long-term open-end endeavours.

5. In your experience, have the requirements to become a top academic changed over the years? For the better?

   Yes, there were very significant changes. First, committees now play the numbers game: numbers of publications and citations, rating of journals, h-factors etc. have become very important. We all know that it is possible to fool this system, and we therefore experience a trend to showcase chemistry with the exhibition parts changing quickly with the seasonal fashion. Second, the professors of the 1960s–1980s were probably more dedicated to teaching. Now the efficiency of reading textbooks and attending lectures and even laboratory courses is questioned, and people believe more and more in the quick ad-hoc retrieval of information via electronic media. Naturally, there is therefore not only the danger that we lose the important inspiration by the charismatic personality of teachers, but also that chemistry is fed like fast food.

6. Have you had a mentor or role model?

   In my case, Max Schmidt was such a person. He was a marvellous teacher with a warm personality. In his school, he created excellent opportunities for the following generation of young scientists. With his organizational talents and his way of dealing with bureaucrats on all levels he not only was able to provide excellent facilities, but also to save us from any suffocating load of administrative or teaching duties. He let us develop our own ideas and patiently helped us out when we suffered the consequences of our own mistakes. He was a man for whom the expression 'Doktorvater' was true in the full sense of the word.

7. What attributes do you rate the highest in becoming a successful scientist?

   There are probably many components and contributions: in most cases charismatic and inspiring mentors trigger the motivation to become a scientist. This step must be followed by a period of hard work employing the full arsenal of modern experimental techniques and theoretical approaches gathering experience in as many fields as possible. At this stage an inspiring environment is also essential as a fertile ground for new developments. From the early years on one should get to know personally prominent figures in the art, thus being able to associate current trends and lines of thinking in research with the people behind all that. Though it is important that the home institution can provide the best equipment and facilities, collaboration with groups engaged in special or exceptional techniques will help to arrive and stay at the frontiers of research. Finally, excellent and dedicated teaching is the basis for recruiting the best students, who will guarantee the right spirit of the group and make it innovative and productive.

8. Could you have pursued another career with similar vigour?

   From my interactions with lawyers and patent attorneys I have learned early on – and to my surprise – that I like that kind of professional activity very much. To investigate a complicated legal case or to dismantle a poor patent, to get to the critical point of a dispute, and to find a solution which in the end may convince a court, can be a challenging endeavour, and great fun. Law certainly has its attractions.

9. Does it still make sense to you to refer to Inorganic, Organic and Physical Chemistry?

   Of course. It is simply helpful to offer the huge available body of information in packages. Good meals are also served in several courses, which should have different smells and flavours, but go well together in the end. Nobody has ever been prohibited to cross borders between subdisciplines or to live happily in the no-man's land in between.

10. Much has been written lately by 'Dawkins and Friends' about scientists and religion. Do you experience involvement in science and religion as contradictory?

    This is a very personal matter. The more we learn, the more we experience how little we know of the world, its origin and what determines its path into the future. All this leaves much to think and to believe for all of us. For a member of a church, always the question arises: If you leave your church, where do you want to go? For those standing far from or against religion, the questions are different, but probably not easier.

11. On the request of a publisher, you started writing a book on your experiences as an Inorganic Chemist. Why did you stop?

    When I was asked to become engaged in this project, I initially liked to write about childhood in the time before, during and after World War II, and about school and university education with all the memorable characters we had as teachers. However, I did not have the nerve to write a text evaluating my environment as I observed and experienced it after deciding to enter a university career. The closer the story got to the present, the more embarrassing the task became and I felt that it was time to stop this questionable endeavour as an autobiographer. I have kept my first 200 pages though (for the family).

12. What role have friendships played in your academic and scientific life?

    Chemistry would have been much less fun without close friends and good colleagues. Importantly, they help to keep you honest, and with them there is no place for pretensions.

13. You have travelled the world – often in the company of your friend Herbert Schumann. Have you discovered places that are still favourites?

    Even if someone else would ask this question, I would not hesitate to name South Africa, probably because I have learned to know this part of the world better than many others. Its intriguing history and development which I witnessed over the last 40 years was at least as fascinating as her diverse and breathtaking natural beauty.

14. During retirement from active chemistry in the laboratory, have you discovered new interests?

    I follow sports events now more closely, as I have more leisure time available. Of course, it clearly is mainly soccer, very much as a local affair. The performance and success of the Munich team(s) have drawn everybody into it. Often it is great entertainment.

15. You have now been living in Munich since the early seventies but still return to your hometown, Landsberg, regularly. What is so special there?

    My roots are there. The small town, with relatives and friends, was a haven where I had a happy childhood, but also could live safely during the war and the difficult years thereafter. My family's history in Landsberg goes back more than 300 years.

16. You now spend many weekends walking in the near Alps. Has nature, and particularly mountains, always been important to you?

    Swimming in the lakes and rivers, and hiking or skiing in the mountains, are the natural activities and attractions in Bavaria, where I have spent most of my life. One becomes addicted to spending as much time as you can outdoors, and if you are fortunate you can do this within the given limits for a long time.

17. Does music and art play a big part in your life? Where do your preferences lie?

    Owing to the restrictions imposed by the early years during and after the war – no musical instruments, no teachers – all that was available for us then was choir singing at school and in churches. Fortunately, the later years spent in Munich and Würzburg with all that these places have to offer in arts and music, and many short or long visits abroad, have given us deeper access also to this world, and I would not like to miss that again.

18. You have just presented an invited lecture at an ICCC Conference in Singapore. Have you set other professional goals for yourself?

    I am afraid that there will not be many more of these opportunities. Without producing any new contributions to research myself, I should rather keep reading and listening to what others do, trying to follow all the new ways of unravelling the secrets of nature, and enjoy all the surprising and exciting findings.

* For laudations by Herbert Schumann and Norbert Mitzel see *Inorg. Chim. Acta* **2005**, *358*, 4107, *Z. Naturforsch.* **2004**, *59b*, 1181 and *Z. Naturforsch*. **2009**, *64b*, 1216.

We raise a toast to Hubert Schmidbaur on his 80th birthday and wish him good health, high spirits, vitality and years of many pleasant experiences.

Tamina Greifeld, Thomas Lindel, Gerhard Maas, Norbert Mitzel, Gerhard Müller, Rainer Pöttgen, Helgard Raubenheimer, Annette Schier