

## Interview with Prof. Herbert W Roesky

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**CHEMCOS Team (CT):** Time and again, you have stressed on the unification of science and arts. Is it a conscious effort on your part to pass on this message to the next generation of scientists and artists?

**Herbert W Roesky (HWR):** Yes, philosophers have repeatedly argued that although science and humanities are two different cultures, we still live in the same world. Therefore I think this barrier between the two fields is quite artificial. I feel that such barriers between cultures are not good for the development of this world.

**CT:** You developed a thermo balance for your diploma thesis. Over your scientific career, you have witnessed huge developments in technology. Do you feel that experimental science has become easier over the decades?

**HWR:** These days we have extremes. For e.g. interstellar space is both interesting and complicated. We also need a lot of money for such research. That is one side of chemistry and science. But on the other hand, you can still do nice experiments (without huge investments). For e.g. we have recently prepared a form of Calcium hydroxide soluble in organic solvent. Under certain conditions in the organic phase, this behaves as an acid! I think this is quite an amazing experiment. This was reported in Chemical Engg News and JACS. So, I think that even (simple) good thinking



### PERSONALITIES

Prof. H W Roesky

In this edition of Personalities, we speak to Prof. Herbert W Roesky, Professor of Inorganic Chemistry at the University of Goettingen, Germany. Prof. Roesky's research interests include inorganic chemistry, materials science and catalysis. His book 'Spectacular Chemical Experiments' (Wiley) is, true to its name, simple and spectacular. In conversation with the CHEMCOS Team, Prof. Roesky explains his pursuit of science and life.

can lead to low-cost, exciting experiments.

**CT:** Your research interests have ranged from Fluorides, Aluminum (I), Phosphazenes, Silylenes and other materials. Is there a pattern to your changing interests? How have they evolved over these years?

**HWR:** The problem is that I have too many interests (chuckles!) and I am not working lifelong on Al (I). I want to have challenges in research, you see. Tomorrow I may like to start with another topic. If I have the money, maybe by the end of next year, I may start with another topic of interest. I do not want boring research on a single topic and turning the wheel too many times. One time is enough, and then I like to change. With change, you learn and when you learn, you do not age... at least you have the feeling you are not aging in your brain.

**CT:** What, according to you, has been the best piece of science of this year?

**HWR:** I have seen a paper in JACS where they (the research group) arranged a hydrogen molecule in a complex consisting of nitrogen ligand and boron atom. As you know, boron atom is a Lewis acid and nitrogen is a Lewis base. And then it was shown that this hydrogen molecule polarizes to give a proton and a hydride. These two then react; I think this is an example of activation, in a simple manner.

**CT:** What is your vision for pursuing love and passion for chemistry?

**HWR:** As I mentioned earlier, you have to win the hearts of the young people. This you can only do if you discuss with the people, if you show them what chemistry can be done. What happens when I speak to you, or when I hear you - these are chemical processes. And we still don't know

exactly what's going on in our brains. There are many others, you see... I can give you a long list of items that have to be discovered and to be understood. Of course, some things are understood, but that, I believe, is a tiny fraction. There is lot for everyone to do.

**CT: So, you believe that the pursuit of the unknown should be the passion of students across the world?**

**HWR:** That depends on the students. If one wants to spend his life in research, then I would think yes, because you cannot do research by simply spending 8 hours a day (in the laboratory). If you really want to become a top guy in your field, then I think you really have to work hard. Only when you work hard can you get really exciting results. But not many people want to do this. Some other people say that they want to earn money. Of course, one can also generate money by making products. Or you can use your brain to write programs. So, it depends what the person really likes. You should do what you really wanted to do. Only then can you be successful. You have to be convinced that you want to do it lifelong.

**CT: What are your thoughts on the Nobel winning trio for this year's Chemistry Nobel Prize?**

**HWR:** Well, I think obviously they deserve it. It is a little far away from chemistry. So, I had not had these people in my mind. But, when I read

what they have done, I think they deserve it.

**CT: Your son, Peter, seems to have taken a cue from you, at least far as deciding his career is concerned. Do your research interests reflect in his approach to science?**

**HWR:** Its funny, normally the sons hate what the fathers do. My wife is not a chemist, so we do not discuss chemistry at home. Therefore, I have not influenced my sons. However, both are chemists. I think the reason is they had this feeling that I am a successful chemist. Therefore, they were looking at chemistry for some time and later they found out that it was just what they wanted to do. One of my sons started with Physics, but later turned to chemistry. He was initially working in physical chemistry, but later he turned to organometallics. I have not influenced them at all. In fact, I wished they would not do it, because everyone would say that I (unduly) supported them, which I never have. They had their own motivate-ions to become chemists. So, now, we are three generations of chemists in our family already.

**CT: We hear that you still ride a bicycle to work everyday and that you have been interested in mountaineering for quite some time. Please tell us more about it.**

**HWR:** I am convinced that you need two things in life: a sound body and a sound mind. Some people feel that at

70, their brain is becoming old and they cannot learn. That is not right, believe me. I am 73; I just learnt the Italian language for delivering a lecture in Italy. A crowd of around 600 people was impressed with this old guy who had learnt Italian! I received a huge applause from them. Of course, this needs time. You cannot learn a different language in a couple of weeks. But I made it.

To bring this to an end, you have to do two things: train your brain and train your body, and if you want to do one after the other, it takes you lot of time. Doctors normally say that one must spend two hours a day doing some exercise. But who has the time? If I spend two hours a day exercising, I would get tired and I cannot read anymore. I do not play tennis or something else; it would take my extra time. So, I come to the Institute on a bike and two weeks a year, I do some extreme climbing. I just got back from mountain climbing. It is very healthy, you have the feeling that you need only water and maybe some fruits, no luxuries. So you are coming back to the really important things in life. It's a hard time you see, going up 1000 metres and getting down. It takes out a lot of energy from your body, but makes you very, very happy.