

Prof. Fritz Scholz – der ewige Enthusiast und der wichtigste Anhänger von Walther Nernst

“Thermodynamics über alles”

It was exactly 20 years ago when I arrived as a DAAD Scholar in Greifswald to work on my PhD under supervision of prof. Fritz Scholz. Before my arrival in Germany, I saw only one photo of prof. Scholz, where he was wearing mustaches on that photo in some Electrochemistry book. In September 2001, me and Valentin (he was also in Greifswald in that time as a Humboldt fellow) we went on the first meeting with Fritz. Meanwhile, Fritz got read off the mustaches in 2001, and at our first meeting in first few moments I got surprised, while thinking that the guy we talked to is a professor from the group of Fritz, and not Fritz himself! After the initial stress, I started talking to him, and I wanted to acknowledge him for accepting me as a PhD student, while addressing him “Professor Scholz, I wish to...” He interrupted me immediately, saying - “Rubin, please call me simply Fritz”. Since we both came from former socialistic countries, it was strange for me to address a professor on his name. In the next few months I realized that he wanted to be close to all of us, people from his group, and he wanted everyone to feel free to discuss and share his/her opinions on the topics we worked on. In that time from 2001 to 2004, several people from Fritz’s group (me, Valentin, Milivoj, Shebojka, Heike, partly Uwe, and some other guy I forgot his name...) worked on a very attractive topic related to measuring the transfer energies of ionized systems across liquid-liquid interface with help of so-called “three-phase electrode approach” designed and invented by Fritz in 1999. From the beginning I could figure out how dedicated Fritz was to see progress in that area, while giving us fresh ideas literally every single morning. Every Monday it was a day for meeting in his office, where we had to present what we have done experimentally in the past week. Although it was a little stress on those meetings, for all of us it was a good chance to discuss about the problems we encounter in our work. As one of the “ion transfer people” (I forgot his name) worked for two years on that topic as a PhD, while saying

to Fritz that “the system does not work...”, one Saturday’s afternoon me and Uwe, we realized that the system (three-phase electrode) worked perfectly for the compounds that guy was “studying” for two years unsuccessfully. Fritz was happy from one side that his invention worked almost perfectly, but he was angry that he lost two years...I remember at one meeting afterwards that Fritz told him “You can continue your work further from the next year...as a singer in the choir”. Then I realized that Fritz was a close friend to all of us, but a real professional when it was about the work. In the next three years, what I can not forget is his enthusiasm, always ready to provide us with fresh ideas, while initiating discussions with all of us. I can bet that he was dreaming transfer of ions and electrons while sleeping! I used to come to work every morning about 08 o’clock a.m. He was in his office always about 07.30 a.m. At 08.05 o’clock I was getting a phone call from him, while asking me “*Hi Rubin, was gibt es neues*”? Since I was going home from the lab never before 08 o’clock p.m., once I said to him “Fritz, I went home yesterday about 09 p.m., I came at work about 07.30 a.m. today, meanwhile I slept. What can be new”? (thinking that he was asking me about new results). He was laughing and he said “Rubin, this is just in a way to start the conversation with new ideas about our further work”. Many of his ideas in that time, looked to me unrealistic. Once he got idea to make enantiomeric electrochemistry, while studying transfer of chiral ions across water-chiral organic solvent interface. One day he called me and he said “We can make a very simple chiral electrode, we can take a silk (which contains lots of chiral amino acids), we can crash it down while freezing in liquid nitrogen, and we can attach a layer of that material at the surface of our working electrode”! I went to my Lab with sad face, Valentin came in the Lab and he asked me “why are you looking so sad”, and I told him “it seems that I should start catching butterflies at Rügen to make a chiral electrode”. I must admit that idea with silk chiral electrode looked impossible to be realized in that time...couple of years afterwards I read a paper where Chinese researchers made something similar as Fritz proposed! Fritz was always ready to discuss days and nights and to fight for his ideas. One day in 2002, I remember that Valentin wanted to explain some of the similarities

between the “three phase electrodes” and the “thin-film electrodes” under limiting conditions. Valentin started drawing some schemes on a sheet of paper and Fritz hit him politely on his hand, saying “no way to accept that concept”. And Fritz was 99% right. From this stance now, I can freely say that Fritz is one of the last (and most influential) followers of Walther Nernst. He understood since long ago that the most important energy of all systems is “hidden” in the thermodynamics, he does not like kinetics a lot, and he is aware of the huge potential from understanding the equilibrium processes. He does not stick to one area of research only, he gets involved in biofuel cells, he invented the “solid-state electrochemistry”, he worked on many electrochemical amperometric and potentiometric sensors, mechanism of adsorption of lipids at lipophilic electrodes, ion transfer across immiscible systems...he acts as editor-in-chief of at least two excellent scientific journal, he edited more than 20 books from the field of Electrochemistry, he supervised number of PhD students (most of them made impressive scientific and academic carriers), he is a dedicated father and grandfather. Fritz is a real professional, he answers the e-mails within minutes, not hours or days, he is always dedicated to help the others, to understand our problems, to discuss with everyone, to propose solutions. In the last 20 years I collaborated with more than 150 scientists from different laboratories all over Europe. I never find such a highly motivated and dedicated person as professor Fritz Scholz is. About his human dimension, one needs eight more days to write what everything he did and he still does for his former and current collaborators. I can not imagine that Fritz will stay at home and read newspapers, or he will go to catch fishes on Baltic Sea when he gets retired. He is a man who will find new equilibrium conditions after he gets off the science, but he will explore that accumulated thermodynamic energy for many years to come. I am 102% sure about that. For me, a young scholar in the late twenties and early thirties, Fritz is simply the best supervisor and best friend I got. The students I met in Greifswald, they were all impressed by his work at Greifswald University. What we all (his former scholars) became now, we all owe to Fritz!

In the end, I can just say-we wish you all the best to you and your family Fritz, and we gonna always contact you to join us to the scientific events we attend. Enjoy your time with the family and find new equilibrium conditions dear Fritz, and never forget about driving force of ionic and electron transfers!



Me and Fritz on Rügen in 2002 (“the butterfly time” 😊)

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PhD in Greifswald under supervision of prof. Fritz Scholz from 2001 to 2004
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