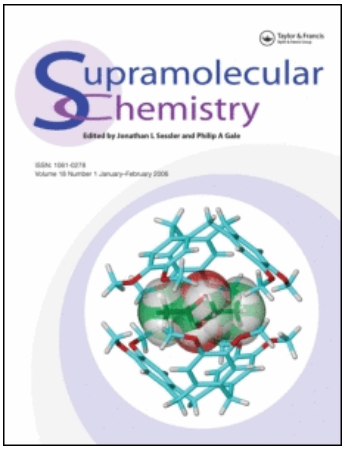

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Preface

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Preface

Special issue of *Supramolecular Chemistry* dedicated to Dmitry M. Rudkevich

This special issue, dedicated to the memory of Professor Dmitry M. Rudkevich (1963–2007), contains over 20 papers contributed by Dmitry's friends and colleagues. The preface was co-authored by Professor David N. Reinhoudt, Dmitry's PhD advisor at the University of Twente, and by Professor Julius Rebek, Jr., who was Dmitry's post-doctoral advisor.

David N. Reinhoudt. I clearly remember the moment when I learned that Dmitry had passed away. My wife called me when I was in a taxi on my way from Dulles airport to the University of Maryland. I had been looking forward to seeing Dmitry later that day at the Calixarene conference, where we were both invited to give a plenary lecture. I knew how proud he always was to show me his latest work, and he had just recently published amazing results on the complexation of gases in molecular cavities, a field that he had pioneered. Discussing chemistry with Dmitry was always great fun and inspiring. When the news spread among the participants at the conference, where so many of Dmitry's friends were present, everybody realised that it was going to be a different meeting. This was 4 August, 2007, and our scientific community had lost a very promising young scientist with such a bright future. For me, it was losing one of my very best PhD students and a close friend. It came as a shock and was totally unexpected because Dmitry had never told me that he had cancer. I am sure that he was convinced that he would also win that battle.

How different was the situation when I first met Dmitry in 1992. He arrived in Twente as a visiting scientist with a PhD degree from the National Academy of Sciences of Ukraine in Kiev, where he held a position as Staff Scientist in the Institute of Organic Chemistry. When he saw our laboratories, the instruments and the library facilities, he was flabbergasted. Nothing special by our standards, but for him it was like another world. He took full advantage of the possibilities and worked seven (long) days, only interrupted by his Saturday morning shopping at the local market. His synthetic skills and organisational talent allowed him to work on several topics simultaneously, either alone or in collaboration with others. His ambition was to publish in top journals. The results were amazing and in the less than 4 years he worked in my group, he published 18 papers. During the first year of his stay, the situation at the Academy in Kiev changed dramatically. He learned that it would be almost impossible to take up his former position there and so we decided to prolong his stay in Twente and with the hope for better times. However, that was not the case and he stayed for almost 4 years. His wife Sasha joined him at Twente and they had a great time. Since the situation in Kiev did not improve, Dmitry decided to summarise part of his work at Twente and submit this research as a second PhD thesis entitled 'Calix(4)arenes in Molecular Recognition'. With a Dutch PhD degree, he left my group to join Julius Rebek at MIT. Before leaving he asked me whether he could continue at MIT some of the ongoing synthetic work in my group on resorcinarenes. He became a real expert in the resorcinarene field and continued that work when he established his own independent research group at the University of Texas at Arlington.

Dmitry was a strong personality with a drive that I have never seen before. He could be tough on himself and on the students he worked with. On the other hand, he would do everything to help them and to share his knowledge. It is hard to accept that there will be calixarene meetings without Dmitry's participation.

Julius Rebek, Jr. Like just about everyone in the supramolecular community, I had seen Dmitry's name in many publications, but it was not until the meeting of the ISMSC in Jerusalem in 1995 that I had personal knowledge of him. There, David N. Reinhoudt told me of his extraordinary efforts in the laboratory at Twente and of his desire to undertake a postdoctoral position in the USA. David and I struck an agreement and Dmitry appeared for work in my laboratories at MIT shortly before I announced that I was leaving for Scripps. Dmitry immediately intimidated some of the other group members by his superhuman efforts in the laboratory: he would arrive before sunrise, sometimes as early as 4:30 in the morning to perform his experiments and access the limited NMR instrumentation available in the department. He maintained this amazing pace of work throughout his time with me. We moved to Scripps in July 1996, where Dmitry was routinely stopped by the San Diego Police for speeding to the laboratory in the early

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morning hours. Eventually, his wife Sasha drove him to work.

During his work with me, he took advantage of his experience with cavitands to introduce the resorcinarene to our research programme. Along with Göran Hilmersson, he made and characterised the first deep cavitands that were stabilised by an upper rim of hydrogen bonds. He named these 'self-folding cavitands' and we pursued research with these constructs to this day. They have shown applications in physical organic chemistry which range from catalysis, stabilisation of reactive intermediates and, most recently, molecular switching devices. Dmitry's second outstanding contribution was in collaboration with Thomas Heinz: the two of them fashioned a capsule from the resorcinarenes that more or less completely surrounded a guest species. Because of its shape (which was non-spherical), it allowed the co-encapsulation of two different guests in such a manner that aligned them in specific orientations. This has led to the concepts of social and constellational isomerism, new types of diastereomers that exist not because of their covalent connectedness but because of the mechanical barriers of the capsule. This cylindrical capsule allowed the direct observation of intermediates in acyl transfer reactions, the amplification and stabilisation of heterocycles unknown in bulk solution, the prevention of peroxide dissociation by constrainment and, most recently, the manipulation of encapsulation phenomena through photophysics. Although Dmitry left the group nearly 10 years ago, every day discoveries are made here that can be traced to his initiatives. His tragic and early death at a time when he was emerging as one of the bright stars in the supramolecular constellation was a painful blow to the community and to me. This issue, dedicated to him, is the merest token of our esteem for his commitment to supramolecular chemistry.