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A Tribute to Renad Z. Sagdeev on the Occasion of His 70th Birthday

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Renad Sagdeev stands in a tradition of great Russian scientists in magnetic resonance and the chemistry of free radicals. He was a student of Yuri Molin, who himself had done his PhD with V.V. Voevodsky, one of the early leaders of the Institute of Chemical Kinetics and Combustion (ICK&C) in Novosibirsk. Voevodsky, in turn, came from the school of the famous scientist and Nobel laureate N.N. Semenov.

Shortly after the discovery of chemically induced dynamic nuclear polarization (CIDNP) [1, 2] and its explanation in terms of the radical pair mechanism (RPM) [3, 4], Sagdeev and Molin started to explore several consequences of the RPM such as the effect of magnetic isotopes and magnetic fields on free radical reactions [5, 6]. A particularly interesting development was the stimulated nuclear polarization (SNP) experiment [7]. This experiment involves microwave irradiation of transient radical pairs in an auxiliary magnet outside the nuclear magnetic resonance (NMR) spectrometer and allows the detection of the electron spin resonance spectrum of these short-lived species via the modulation of their CIDNP effects. Altogether, these novel results were crucial in establishing the field of Spin Chemistry as it is nowadays called and put the Novosibirsk group firmly on the map. They earned Renad Sagdeev the Lenin Prize in 1986 (together with Molin, Salikhov, Buchachenko, and Frankevich) and in 1994 the State Prize in Science and Engineering of the Russian Federation.

My own interactions with Renad and the Novosibirsk group started in the late 1970s and led to frequent exchanges in the 1970s and 1980s. My visits to Akademgorodok, the lovely science town near Novosibirsk, were extremely gratifying, both scientifically and socially. I remember vividly the stimulating intellectual atmosphere at ICK&C but also the social activities such as frequent barbecues and other outings. Kev Salikhov's teachings on fishing in the Ob lake and

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picking edible mushrooms (strictly forbidden in the Netherlands) were lessons for life. At the institute, financial conditions were not lavish and modern commercial equipment was difficult to obtain. However, this was more than compensated by the great experimental skills and the instrument building capacity of the group. Also, chemicals were hard to come by, so before my trips to Novosibirsk Renad would send me considerable grocery lists of chemicals to bring to Russia (fortunately unnoticed by Russian Customs!). These visits and return visits by Renad and his coworker Alexei Podoplelov to Groningen (and later Utrecht) yielded several joint publications [8–11].

In the late 1980s, Renad took a very important initiative to establish the International Tomography Centre (ITC), in which a high level of research was combined with entrepreneurial activities such as NMR and magnetic resonance imaging services. The establishment of the ITC and its relation with Bruker Spectrospin were very important during the difficult times resulting from the collapse of the Soviet Union in 1991. Under Renad's leadership, the ITC was adopted by the Russian Academy of Sciences and grew out to the premier center for research in magnetic resonance and Spin Chemistry.

Apart from his qualities as a scientist and organizer, Renad Sagdeev is also involved in science policy: as the vice-president of the Siberian Branch of the Russian Academy of Sciences, he plays an important role in shaping science in Siberia. Finally, I should mention his great human qualities: he is an energetic and inspiring leader, but also genuinely interested in his co-workers and colleagues. Renad, I wish you a very happy birthday and many healthy years to come!

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