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List of publications

This thesis is based on the following papers:

**Chapter 3**
*Deep-UV absorption and Rayleigh scattering of carbon dioxide.*
D. Ityaksov, H. Linnartz, W. Ubachs.

**Chapter 4**
*Deep-UV Rayleigh scattering of N₂, CH₄ and SF₆.*
D. Ityaksov, H. Linnartz, W. Ubachs.

**Chapter 5**
*Rotational analysis of the A₂Σ⁺(v=1,2) – X²Π(v=0) electronic bands of ¹⁵N¹⁸O.*
D. Ityaksov, S. Stolte, H. Linnartz, W. Ubachs.

**Chapter 6**
*Temperature-dependent cross-sections of O₂−O₂ collision-induced absorption resonances at 477 and 577 nm.*

Furthermore the author contributed to:
- *A compact CH₄-stabilized laser with a telescopic cavity.*
  *Conf. Digest,* 218, Conf. on Precision Electromagnetic Measurements, Ottawa, Ontario, Canada (2002).
- *Laser frequency standards with telescopic cavities.*
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As I sit here, on this summer afternoon in July 2009, I have in front of me the pages of my complete manuscript, marking the end of a winding research way that started yet in 2004. It was a way full of outbursts of constructive inspiration, scientific ardour and sweet victories, however, sometimes darkened by sad disenchantments, and accomplished during long hours, days, weeks and years of hard work. It summarizes scientific results obtained in a laboratory illuminated by glimpses of a “physicist-made laser show under laboratory controlled conditions” and flavoured by monotonous roars of running pumps of the nearby standing “blue monster” setup. The climate in the Netherlands is quite mild and change of seasons is said to be very smooth and barely perceptible. On the contrary to many inhabitants of Amsterdam, I could easily identify the approach of summer and winter when it was suddenly getting colder or warmer in the lab due to a malfunction of the air-conditioning system. Both situations are well comfortable for a guy like me, who was born and had been living in Central Asia for 17 years, before I relocated to Siberia. Here, in Amsterdam I became a real expert in replacing laser dyes and nearly 100 one by one records in the public dye-consumption diary in the dye room speak for themselves, as does the amount of consumed methanol and 10 cent coffee mugs.

Today, looking back to the period of my work in the Laser Centre Vrije Universiteit in Amsterdam (in fact I was a member of both the teams of Atomic, Molecular and Laser Physics, as well as Physical Chemistry) I recall that time with warmth and smiles. Dear friends! My work and my thesis would have been never completed without your support and participation.

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