



Dr. Michael M. Silaev

SILAEV, Michael Mihailovich, b. 25 February 1947 in the Moscow region Orekhovo-Zuevo, Moscow, Russia. Chemist. Education: First Class Diploma, 1971, Postgraduate, Radiation Chemistry Laboratory, 1973-76, PhD, 1992, Chemistry Faculty, Lomonosov Moscow State University. Appointments: Probationer-Researcher, 1971-73, Junior Researcher, 1976-93, Researcher, 1993-2003, Senior Researcher, 2003-17, Radiation Chemistry Laboratory (since 2015 High Energy Chemistry Laboratory), Chemistry Faculty, Lomonosov Moscow State University; currently continues to scientific work at home.

In total over 100 scientific articles (mostly without co-authors) are published in professional journals and three patents for inventions are taken out.

On the basis of published scientific articles information about the author was included in the international reference publications *Who's Who in the World*, 2007, 2012–2014, 2016 (New Providence, NJ, USA) and *2000 Outstanding Intellectuals of the 21st Century*, 2008–2011, 2014–2017 (Ely, England). The International Biographical Centre (IBC; Ely, England) has included information about the author in *Foremost Scientists of the World*, 2008; *International Scientist of the Year*, 2008; *Leading Educators of the World*, 2008; *Top 100 Educators*, 2009, and *Dictionary of International Biography*, 2010, 2011, 2014–2016.

The main ideas in scientific works of Dr. M.M. Silaev

I. Energy

1. Oxygen is an oxidation autoinhibitor (or an antioxidant). In the binary systems consisting of saturated (hydrocarbon, alcohol, etc.) and unsaturated (dioxygen, formaldehyde, olefine, etc.) components, unsaturated compound act both as a reagent and an autoingibitor – a source of low-reactive free-radicals (tetraoxyl, formyl, 1-hydroxy-2-propenyl, etc.) shortening of the kinetic chains.

II. Environment

2. The self-regulation of natural processes involving low-reactive free-radicals. The phenomena of the progressive inhibition of nonbranched-chain free-radical processes with an increase (after attaining the optimum concentration, corresponding to the highest rate of the process) the concentration of unsaturated compound may be elements of self-regulation of natural processes that returns them to a stable stationary state.

3. The low-reactive hydroxytetraoxyl free radical (an addition product of the hydroxyl free radical to ozone) **as an intermediate in the the process of the effective absorption and transformation of biologically hazardous UV radiation energy in the Earth upper atmosphere.**

[I, II. Silaev, M.M., *Theor. Found. Chem. Eng.*, 2007, **41**(3; 4; 6), 273; 357; 831; *High Energy Chem.*, 2008, **42**(2), 95 (Engl. Transl.); *American Journal of Polymer Science and Technology*, 2017, **3**(3), 29.]

III. Materials

4. (a) The method of 1,4-glycols synthesis (the saturated alcohol C₁–C₃—allyl alcohol system, γ -irradiation), USSR Inventor's Certificate 805599; **(b) The method of γ -diols synthesis** (the saturated alcohol C₁–C₃—allyl alcohol systems, autooxidation), RF Patent 2030382; **(c) The method of γ -acetopropyl alcohol synthesis** (the acetaldehyde—allyl alcohol system, autooxidation), RF Patent 2036894.

[III. (a) Silaev, M.M., et. al. *Byull. Izobret.*, 1982, no. 3, p. 273; Silaev, M.M., *Khim. Vys. Energ.*, 1990, **24**(3), 282; (b) *Vestn. Mosk. Univ.*, Ser. 2: *Khim.*, 1994, **35**(1), 40; (b), (c) Silaev, M.M. *Byull. Izobret.*, 1995, no.7; 16, pp. 136; 134. (in Russian)]

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