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Jülich, 18.06.2015

Nominating Dmitry V. Schur, Svetlana Yu Zaginaichenko,
T. Nejat Veziroglu for the Nobel Prize of 2016 in Chemistry

Dear Members of Nobel Committee for Chemistry,

I support researches of Dmitry V. SCHUR, Svetlana Yu ZAGINAICHENKO (from IPMS of NAS of Ukraine) and T. Nejat VEZIROGLU (from University of Miami, International Association for Hydrogen Energy), who have presented their research results in the published paper "The hydrogenation process as a method of investigation of fullerene C_{60} molecule" ad nominate for awarding the 2016 Nobel Prize in Chemical sciences.

Although I don't happen to know Ukrainian scientists personally, I strongly believe both them and especially their work deserves more serious attention.

In the course of synthesis of C_{60} molecules the process rate of fullerene molecules formation is contiguous with the rate of light, and in this connection it is impossible to observe this process using the devices. For this reason all arguments "for" and "against" of one or another mechanism of fullerene molecules formation are indirect.

The research results allow to conclude that the spherical carbon molecules C_{60} can be formed from pentatomic molecules during the process of clustering at the initial stage of its formation, i.e. the five-atomic molecule is a structural unit of the C_{60} molecule. This paper has laid the basis for the theory of the existence and transformation of spherical molecules.

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The possibility of the existence of three major resonance structures of C_{60} fullerene is also noted in their paper. By virtue of the fact that the temperature-dependent anomalies in the behavior of the fullerene molecule is repeated not only in fullerite, but also in solutions of fullerenes, there is a need to search for the reasons for these anomalies (at constant thermodynamic conditions) not in the environment, but in the fullerene molecule itself.

D.V. SCHUR, S. Yu ZAGINAICHENKO and T. N. VEZIROGLU are involved in the physico-chemical regularities of synthesis, extraction, crystallization processes, study of the properties of C_{60} and an understanding of the formation mechanism and behavior of fullerene at all stages of synthesis and in different aggregate states is the key moment for unveiling of the potentials of the synthesis process and application of fullerenes.

I am familiar with recent research results of Schur D.V., Zaginaichenko S. Yu, Veziroglu T. N. and write this nomination letter in support of this work.

Sincerely Yours,

Prof. Dr.-Ing. Detlef Stolten
Director of the Institute of Energy and Climate Research
Full professor at the RWTH Aachen University