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To: Prof. Sara Snogerup Linse,
Chairman of Nobel Committee for Chemistry at
The Royal Swedish Academy of Sciences,
Box 50005,
SE-104 05 Stockholm, Sweden
E-mail: Sara.Linse@biochemistry.lu.se; info@kva.se; reception@kva.se

Subject: Nominating Dmitry V.Schur, Svetlana Yu.Zaginaichenko, T. NejatVeziroglu for the Nobel Prize of 2016 in Chemistry

Dear Professor Linse,

the Board of Scientists at its meeting on April 27, 2015 was united in proposing the names of Ukrainian scientists Dmitry V. Schur, Svetlana Yu. Zaginaichenko and American scientist T.Nejat Veziroglu, as candidates for the Nobel Prize in Chemistry. This award suits them perfectly.

The aim of their study presented in paper "The hydrogenation process as a method of investigation of fullerene C_{60} molecule" was to investigate the behavior of the C_{60} molecules in the gaseous phase and in solutions as well as to study the crystallization processes of fullerene by salting-out method and to determine the position of the fullerene molecule on the phase diagram of carbon.

It has been shown that fullerene C_{60} molecule consists of five-atom molecules, has its own spx-hybridization, and for this reason, the fullerene shall be allocated as a new allotropic modification of carbon on the carbon state diagrams. For the first time, they have found that the fullerene molecule in solution at temperatures above 250 K exists in two states - β and γ.

It has been noted by these scientists that the dualism of the fullerene molecule during its dissolution allows you to create both true and colloid solutions. At temperatures above 270 K fullerene molecule in solutions forms the charge-transfer complexes; it is quite stable at unchanging conditions of existence and is the reference molecule for determining the donor ability of various solvents.

In the paper they explain the continuous phase transition in fullerite by the gradual increase in the outer electron cloud of the fullerene molecule (i.e. by an increase in the Van der Waals radius of the molecule). This is due to the gradual increase in external π-electron cloud of the molecule, initiated by an increase in the number of outer-molecular bonds in the β- and γ-modifications. This is confirmed by their experiments on hydrogenation of fullerene molecule.

Based on the fact that the fullerene molecule is a new allotropic modification of carbon they have proposed the space diagram of carbon allotropic modifications at two levels of organization. The authors of this paper have laid the foundations for the theory of the existence and transformation of spherical molecules.

In view of the urgency of paper theme, the volume of studies, scientific novelty, practical value and quality of the results their research results are widely used by the scientific community in the world. We are strongly recommend them for the award of Nobel Prize in Chemistry and hope that this letter will be of value to the Nobel Committee of Swedish Academy of Sciences in its consideration of our nomination.

Sincerely yours,

Giuseppe Spazzafumo
Member of the Board of Directors of the International Association for Hydrogen Energy
Past President of the Italian Hydrogen Forum