

**Eugene A. Katz.**

**Fullerenes, Carbon Nanotubes and Nanoclusters: Genealogy of Forms and Ideas [in Russian].**

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The discovery of C<sub>60</sub>, a third variety of carbon, in addition to the more familiar diamond and graphite forms, has generated enormous interest in many areas of physics, chemistry and material science. Furthermore, it turns out that C<sub>60</sub> is only the first of an entire class of closed-cage polyhedral molecules consisting of only carbon atoms - the fullerenes (C<sub>20</sub>, C<sub>24</sub>, C<sub>26</sub>, ... C<sub>60</sub>, ...C<sub>70</sub>, ... carbon nanotubes). The author explains modern scientific concepts and terms in a popular manner, with main emphasis of interdisciplinary character of fullerene science and interrelationships of various branches of cognition. It is discussed how Nature uses fullerene-like structures to minimize energy and matter resources in molecules and nanoclusters, viruses and living organisms. Examples of achievement of such goals in architecture are also presented.

Another dimension of the book is history and personality. From some point of view, this is a historical book. It tells, first of all, about recent history of science. History of discoveries of fullerenes and carbon nanomaterials made at the end of XX century is so interesting and fascinating as a detective novel. Just as, no doubt, the colorful personalities of the explorers are very special. The discovery of fullerenes is a brilliant example of merging of different areas of science. The book author discusses, distant (at first glance) problems of molecular and solid state physics, materials science, electronics, inorganic and organic chemistry, astronomy and biology. Every time he tries to do it in the context of history of discoveries and the personalities of the discoverers following James Clerk Maxwell's statement: "In Science, it is when we take some interest in the great discoverers and their lives that it becomes enduring, and only when we begin to trace the development of ideas that it becomes fascinating".

In addition, the book reviews scientific achievements of the past on which foundation the modern fullerene science is based. To follow it, a reader will travel in depth of time until the time of Renaissance and even classical Antiquity. Some of these historical excursions include surface touching to the problems of philosophy of science such as: role of scientific conjecture, the importance of personality in art and science, other sides of interrelationships and differences of art and science as two different ways of cognition, two parts of one whole – humanity culture.