

THE GEOSPHERE AS A BIOTECHNOLOGICAL REACTOR OF THE EVOLUTION

A.E. Sidorova, V.A. Tverdislov

Lomonosov Moscow State University, Moscow, Russia

Abstract. The geobiosphere of the Earth is treated as an evolvable hierarchy of active media capable of traversing through a series of regular and irregular structures: from the physicochemical to the ecological ones. The spontaneous origination of spatial symmetries and asymmetries in the distribution of the major chemical elements, which later formed the biosphere, was one of the key factors of the origination of living systems precursors in the abiogenic medium. The turnover of chemical elements and compounds became the basis of the co-evolution of the living and the inanimate matter, photosynthesis being the key process of their coupling.

Keywords: active media, geobiosphere, self-organization, photosynthesis, evolution.