

# Surfaces, the Missing Link in the Origins of Life

Balázs Könnyű<sup>1,2</sup> and Ádám Kun<sup>\*2,3,4</sup>

---

## ABSTRACT

In this article, we argue for the necessity of a surface-bound stage in the origin of life. Accordingly, at least the polymerization of the biologically active polymers (RNA) was produced on mineral surfaces, which then could also retain functional ribozymes. Functional ribozymes could then form communities, which, on surfaces, due to limited mobility and local interaction, can co-exist and be resistant to parasitic replicators. An example of such a system, the *Metabolically Coupled Replicator System* (MCRS) is discussed in detail.

**Keywords:** Origin of life, surface-bound replicator, RNA world

---

---

\*Correspondence: [kunadam@elte.hu](mailto:kunadam@elte.hu)

Full list of author information is given at the end of the article.