

## Special Issue

# Thermodynamic Inversion at the Origins of Life: A Comprehensive Approach

### Message from the Guest Editor

This Issue proposes to consider the processes that occur during the transition of prebiotic systems to life through a strong increase in the level of free energy in them. The topics considered include: - Thermodynamic transformations during the origin of life;

- Hydrothermal and related systems, which create energy conditions conducive to the thermodynamic inversion necessary for the emergence of life;

- Energetics of life and a need for the establishment of an out-of-equilibrium (bifurcate) state when life emerges;

- Models for the emergence of life, which are amenable to the establishment of an out-of-equilibrium state;

- The known and hypothesized mechanisms by which the energy from the environment converts into chemical energy that life utilizes.

### Guest Editor

Dr. Vladimir Kompanichenko

1. Institute for Complex Analysis of Regional Problems RAS, Birobidzhan, Russia
2. Network of Researchers on Chemical Evolution of Life, Leeds, UK

### Deadline for manuscript submissions

closed (30 November 2023)



## Life

an Open Access Journal  
by MDPI

Impact Factor 3.4  
CiteScore 6.0  
Indexed in PubMed



[mdpi.com/si/167342](https://mdpi.com/si/167342)

*Life*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[life@mdpi.com](mailto:life@mdpi.com)

[mdpi.com/journal/  
life](https://mdpi.com/journal/life)





# Life

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.4  
CiteScore 6.0  
Indexed in PubMed



[mdpi.com/journal/  
life](https://mdpi.com/journal/life)



## About the Journal

### Message from the Editor-in-Chief

*Life* (ISSN 2075-1729) is an international, peer-reviewed open access journal that publishes scientific studies related to fundamental themes in life sciences. Some papers are published individually, while others are submitted for inclusion in special issues with guest editors. You are invited to contribute a research article, essay, or a review to be considered for publication.

---

### Editor-in-Chief

Prof. Dr. Lluís Ribas de Pouplana

Institute for Research in Biomedicine (IRB Barcelona), The Barcelona  
Institute of Science and Technology, 08028 Barcelona, Spain

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPIus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q1 (Biology) / CiteScore - Q1 (Paleontology)