**CO world chemistry workshop on:**

# Nano to Planets: Approaches to understanding how life began

13:30-18:20. Friday, November 8, 2024 @Mishima Hall, ELSI

13:30-13:35 Ryuhei Nakamura (ELSI)
Opening remark

**Session 1. Interfacial processes in micropore structures**

13:35-14:00 Satoshi Okada (JAMSTEC)
Mineral deposition in deep-sea microchannels

**14:00-14:45 Ian C. Bourg (Princeton Univ.) *(Keynote Speaker)***
Hydrophobic and hydrophilic aggregation of organic molecules in confined and interfacial water

14:45-15:10 Hye-Eun Lee (ELSI)
Nano properties in submarine hydrothermal vents: Clues to life's origin

15:10-15:30 Break

**Session 2. Electricity generation and its utilization**

15:30-15:55 Norio Kitadai (JAMSTEC)
$H_2$-fueled pyrite-pyrrhotite redox cycle: a sustained electron supplier for the autotrophic origin of life

**15:55-16:40 Teppei Yamada (Tokyo Univ.) (*Keynote Speaker)***
Development of high-voltage thermocell and temperature dependence of the composition of polysulfide species and their redox potential

16:40-17:00 Break

**Session 3. Planetary processes behind the origin of life**

17:00-17:25 Yamei Li (ELSI)
Organic chemical evolution driven by redox gradients on icy planetesimals and early Earth.

17:25-17:50 Shuya Tan (JAMSTEC)
Role of hydrothermal activity on extraterrestrial ocean chemistry in the Solar system

**-18:20 Open discussion**