Earth: A Habitable Planet in Transition

M. Santosh

China University of Geoscience Beijing, Beijing 100038, P.R. China

Faculty of Science, Kochi University, Kochi 7870-8520, Japan

The continent-ocean-atmosphere system on Earth defines a unique trinity that has made the planet habitable. A complex and protracted evolution history of nearly 4 billion years preceded the onset of modern-style life on Earth. The birth of continents, their emergence above sea level enabling weathering and nutrient supply, assembly-evolution-disruption and re-assembly of supercontinents, building the archives of metallic mineral resources, and shaping the environment for the birth and evolution of life were some the major steps that the planet went through. However, the planet is currently going through a transition period due to population explosion and resultant demands of the modern society that has led to resource depletion, climate change, energy crisis and resultant concerns on sustainability. This talk provides a brief summary of the step-wise building of habitability on planet Earth, and the current issues that challenge sustainability.