

Editorial

Fracture has been studied for many years, and a vast amount of studies have been done hitherto. For instance, fatigue has been studied more than 150 years and more than 44,000 papers on fatigue have been published as of 1991 since 1838 [1]. There have been many international journals but also many international conferences and symposia that have been held all over the world.

On the other hand, recently nanostudies and computational science and mechanics have rapidly and remarkably developed respectively.

In spite of the backgrounds mentioned above, still strength and fracture including the related problems remain unsolved. For instance, at least as far as the equation for predicting fracture strength and fracture life are concerned, there have been no equation explicitly expressed in nonlinearly nano, meso and macroscopic terms without containing any hypothetic parameters and with time sequence.

The question “Why” is raised. What is the reason for such a situation?

As one of the way, it is proposed to start this journal for highlighting strength and fracture as complexity system. Knowledge-based data for strength and fracture are very much needed. Also the development of complexity system science of strength and fracture into engineering is hoped for actual use. As the subject of fracture in actual cases, global problems, such as, geophysics and geotechnology field will

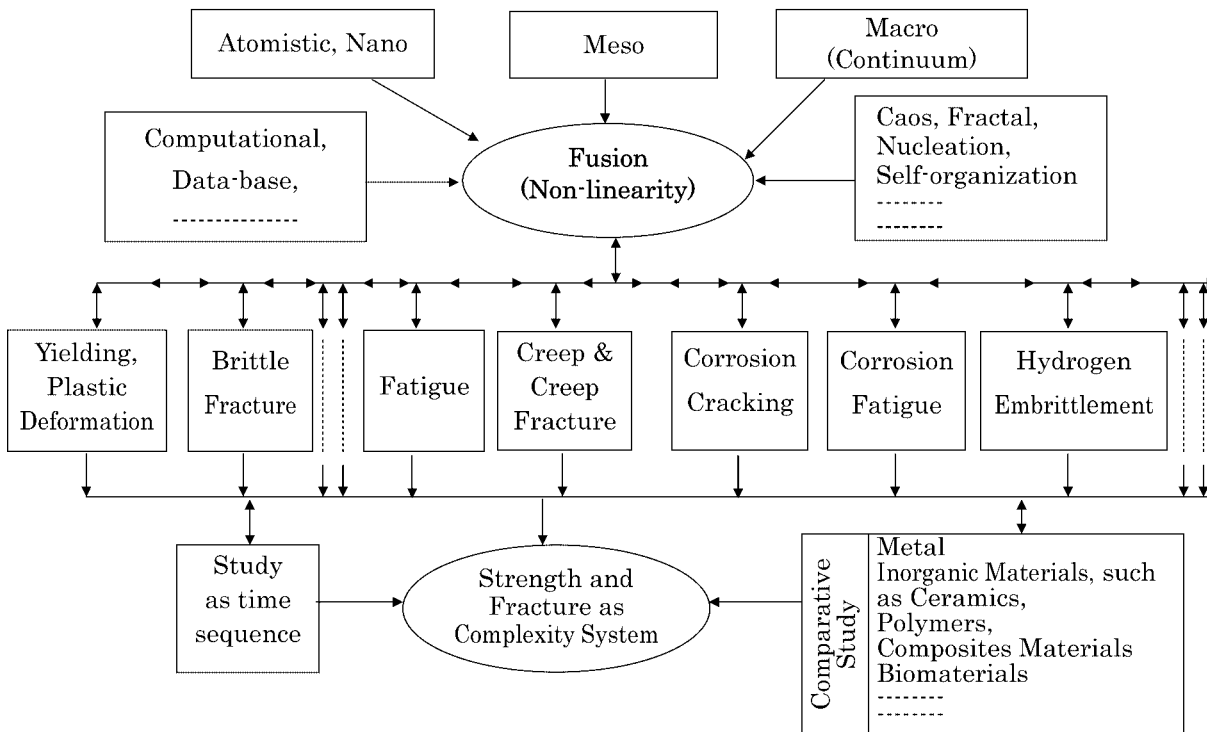


Fig. 1. An example of flow chart of strength and fracture as complexity system.

be very much concerned being related to earthquake science and engineering. Another hopefully actual use is to establish the scientific base for the standardization of advanced and conventional engineering materials concerning strength and fracture. An example of a flow chart of the concept of a journal is shown in Fig. 1 [1].

Prof. Takeo Yokobori
Editor-in-Chief
Strength, Fracture and Complexity

Reference

- [1] T. Yokobori et al., *Strength and Fracture*, Japanese Soc. Str. Frac. Mater., 1999, pp. 308 (in Japanese).