

## The Story of Zircon: Strength, Elasticity and Microstructure

Zircon is a common accessory mineral that can be found on Earth, Moon, Mars and meteorites. Importantly, zircon can preserve primary geochemical information for very long time and therefore is popular for age determinations in ancient rocks or impact events. This fact suggests zircon as a strong material. However, deformation and twinning are also found within zircon, indicating that other factors such as pressure may play a key role in altering the shape and microstructure of zircon markedly. Strength study of important planetary materials at high pressure, together with microprobe examinations of the quenched samples provides insightful information for better understanding the evolution of the planets. In this presentation, I will discuss the strength, elasticity and microstructure of zircon at both high and room pressure and its implications to evolution of the planets.