

28 Jan 2015 [Karl Whittle \(Sheffield\)](#) Nuclear Materials Damage and Disorder - Linked?

In the development of next generation nuclear reactor technologies (fission and fusion), the deleterious effects of radiation need to be minimised, enhancing both material lifetime and efficiency. Designing materials that are immune to the effects of radiation damage, is both complex and tortuous, for example the competing effects of both composition and structure on a materials response to radiation damage in high burn-up nuclear fuel, or as a first wall material in a fusion core. Using three example systems, predominantly oxide in nature, it is possible to compare and contrast who the effects of both composition and structure impact a materials response to radiation damage, and it's likely applicability.