

## Smart interlocking using asymmetric structures to actively respond to changes in environment

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According to recent research trends, smart technologies such as smart windows responding to ultraviolet rays, temperature and electric signals actively respond to changes in the external environment and are used in various fields. Smart interlocking using asymmetric structures aims to test whether interlocking can actively cope with environmental changes by using modulus change of material which changes according to external environment change. Functional polymers such as hydrogels were used to change the modulus depending on the amount of water absorbed around the external moisture environment. Hydrogels are characterized by their modulus being reduced as they swell by absorbing water between polymer networks. Using this feature, an asymmetric structure is created and applied to smart interlocking.