

NON-LIGATING BRACKET SYSTEM

Epsilon Non-ligating super flexible titanium alloy bracket system for quicker brace treatment

Challenge

Conventional metal brackets used in braces are usually made of stainless steel. Orthodontic arch wires are inserted into slots (or walls) in the brackets to exert orthodontic forces and elastics (which attract bacterial plaque) are used to tie the arch wire into the individual brackets. Conventional orthodontic treatment mechanics uses a series of increasingly stiffer wires to correct crooked teeth and the entire treatment is divided into 3 distinct stages, where stage 1 needs to be completed

Our Solution

To address this problem, A*STAR's Singapore Institute of Manufacturing Technology (SIMTech), in collaboration with Innobrace Orthodontics has developed the world's first non-ligating bracket system made of super flexible titanium alloy. It has a highly flexible arch wall engagement system that allows dentists to secure arch wires onto brackets without the use of elastics.

This non-ligating bracket system allows the arch wire to exert pressure on the flexible walls of the bracket. The walls then absorb a portion of the reaction force, resulting in gentle continuous force on each tooth. This accelerates the movement of teeth into their desired positions, increasing treatment efficacy. As and when individual bracket flexibility is not desired, the bracket can be tightened around the arch wire.

The main reason for the shorter treatment time is the meshing of the 3 stages of orthodontic treatment mechanics. Stage 2 can be started before the end of stage 1 and stage 3 can be started before the end of stage 2.



Summary



Reduces treatment time by up to 33 percent



Reduces visit frequency because the bracket system provides gentle continuous forces over a longer period of time.



Reduced accumulation of bacterial plaque and occurrence of spontaneous dislodgement

Potential Applications



Commercially available bracket system sold by Innobrace Orthodontics

