

# Automation Process of Porcelain-Fused to SLM CoCr Metal Prosthesis

## Technology Overview

The invention relates to the process of fusing porcelain onto metal alloy cobalt-chrome (CoCr) dental crowns/bridges. The technology in particular relates to an automated method of applying porcelain onto the CoCr coping made by selective laser melting (SLM) technique, instead of the conventional invest casting method. Compared with existing technologies, the solution is simple to operate, saves time and material as well. The competitive advantage of this solution is that the turnaround time of fabricating dental crowns is significantly shortened from 16 days (using existing technology) to only 4 hours. The new process can produce 40 dental crowns in 4 hours, with one set of 3D printing equipment.



## Features & Specifications

Our solution comprises of:

- The dental coping is designed by ExoCAD software based on scanning data.
- The CoCr dental coping is made by the selective laser sintering technology.
- The porcelain slurry is prepared.
- The above slurry is applied on to the CoCr coping with aid of the 3D printed mold.



## Customer Benefits

The improvement over the "State of the Art" is the all process becomes simple to operate, reduces the dependence on worker's skill. The value proposition is to shorten the turnaround time, improve the accuracy, and minimize the reduction of patient's natural tooth.

## Potential Applications

This technology is used in dental lab industry. Dental crowns, or bridges, or dentures can be made based on this technology.