

# **Cobalt-Chromium Alloys with Improved Properties for Dental Applications**

Mirabela Georgiana MINCIUNĂ<sup>1,a</sup>

<sup>1</sup> „Gheorghe Asachi” Technical University of Iasi, Romania

<sup>a</sup> [mirabela.minciuna@yahoo.ro](mailto:mirabela.minciuna@yahoo.ro)

This research is a cobalt-based alloy with an original composition that includes non-toxic and non-allergic silicon (Si) as an alloy component, which endows the alloy with a high chemical resistance and a high biocompatibility.

Metallic dental alloys usually have very good durability, mechanical resistance and biocompatibility characteristics. Dental alloys became more diverse in time, depending on the technology applied and the characteristics required for a specific type of dental prosthesis.

Cobalt-chromium alloys are frequently used to make the metallic framework of the dental prostheses, or to refurbish deteriorated ones, due to their biocompatibility, their outstanding mechanical resistance and their higher elastic modulus, compared to other conventional alloys. The elastic modulus of titanium is inferior compared to that of cobalt-chromium alloys, its mechanical resistance is low and the size of the prostheses made from it is larger.

The global concern to improve the classical technologies of execution both of the implants, and also the biomaterials from which are made, aims the promotion of a new multifunctional implants, with best performances for a long time.