BRAMAT 2022
12TH INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE & ENGINEERING
Transilvania University of Brasov - Romania
Materials Science and Engineering Faculty

Pedro P. Socorro-Perdomo[1], Néstor R. Florido-Suárez[1], Julia C. Mirza-Rosca[1], Adriana Saceleanu[2]
1 University of Las Palmas de Gran Canaria, Mechanical Engineering Dept.,
University Campus of Tafira, Engineering Building, 35017 Las Palmas de Gran Canaria, Spain, e-mail: nestor.florido@ulpgc.es
2"Lucian Blaga"University of Sibiu, Medicine Faculty, 550024 Sibiu, Romania, email: adriana.saceleanu@ulbsibiu.ro

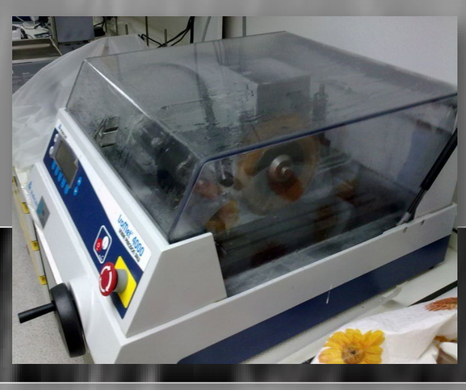
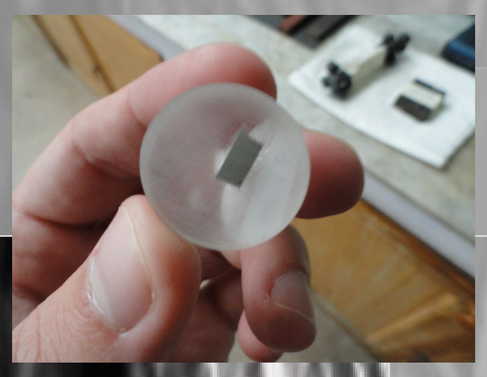
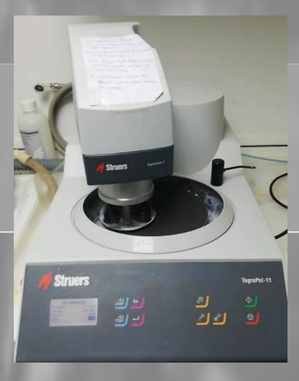
CORROSION BEHAVIOR OF SOME NI-CR AND CO-CR DENTAL ALLOYS

The use of dental alloys as a material for bridges, crowns and prostheses is currently being investigated, taking into account their biocompatibility, as the material must be non-toxic and not cause allergies, inflammation or other reactions affecting the body.

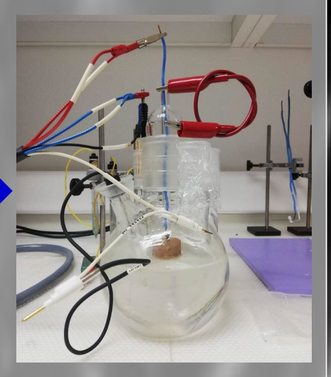
In this field, Co-Cr and Ni-Cr based alloys are often used, as they have good corrosion resistance and high wear resistance due to the crystalline nature of cobalt and nickel. In addition, Ni-Cr and Co-Cr alloys have been used in the field of dentistry for porcelain or porcelain-fused-to-metal crowns due to their good biocompatibility, wear resistance, long service life, good mechanical properties and superior corrosion.

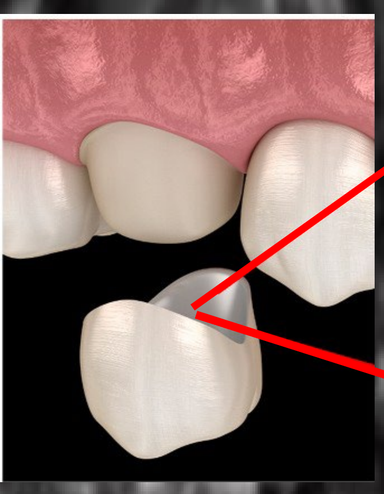
Experimental Materials

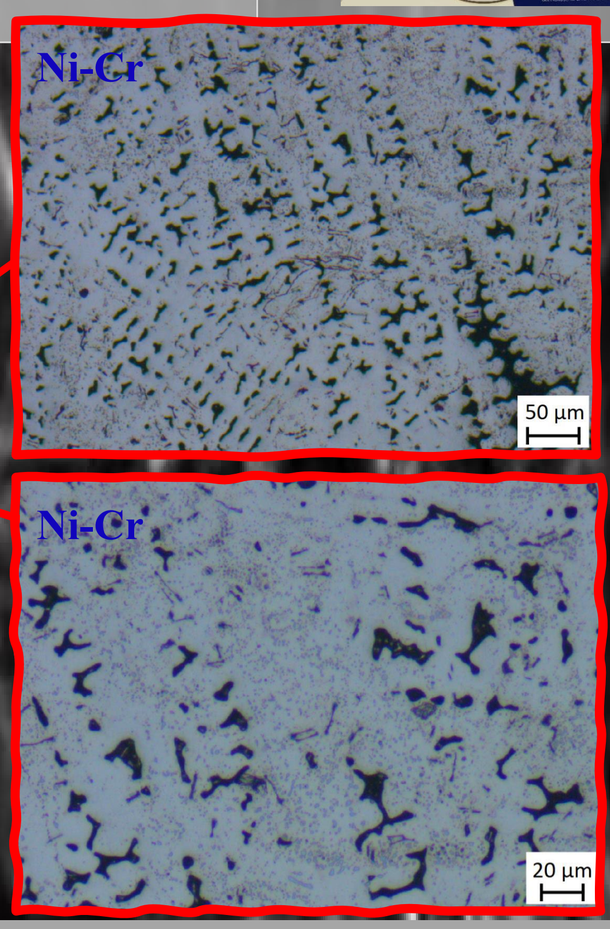

Surface Preparing

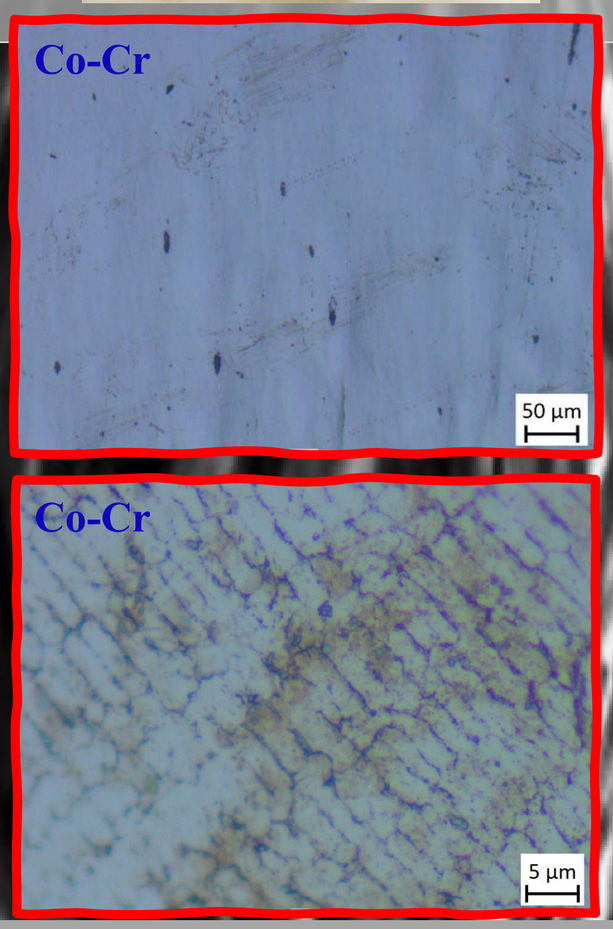




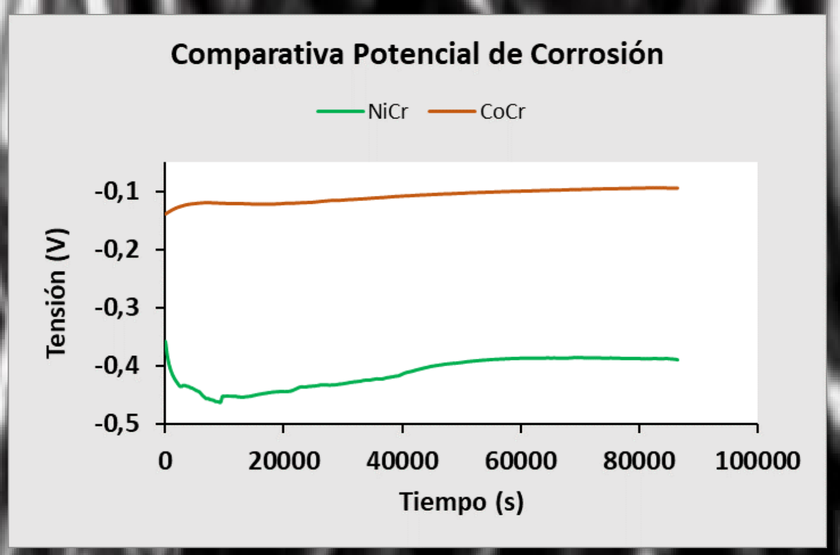
Metallography Analysis

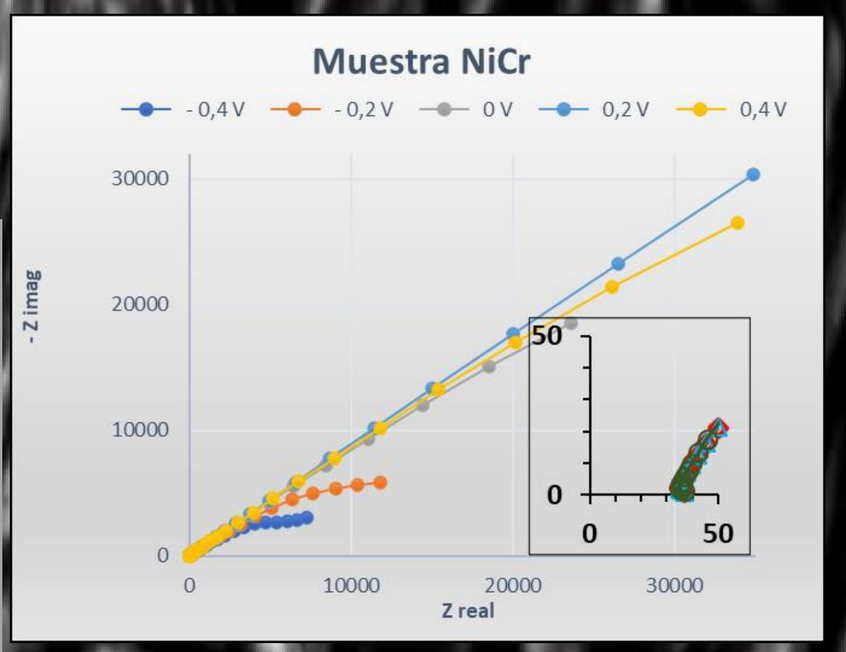












After electrochemical etching, the metallographic test is carried out by taking images with the metallographic microscope and by electrochemical test consisting in inserting a specimen into an electrochemical cell together with Saturated Calomel Electrode (SCE) as reference and Pt electrode as counter electrode. Corrosion potential (Ecorr) was determined and Electrochemical Impedance Spectroscopy (EIS) was applie