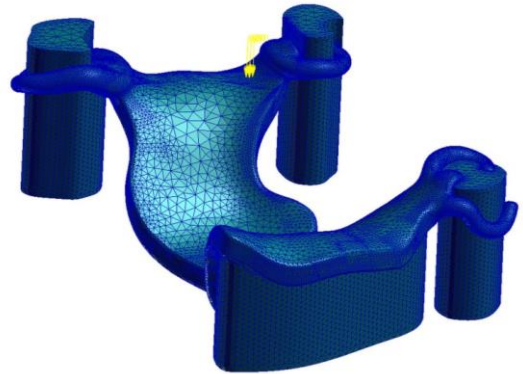


## EFFECT OF SUPPORT AND MATERIAL PROPERTIES OF THE STATE TENSION AND STRAIN SKELETON DENTURE

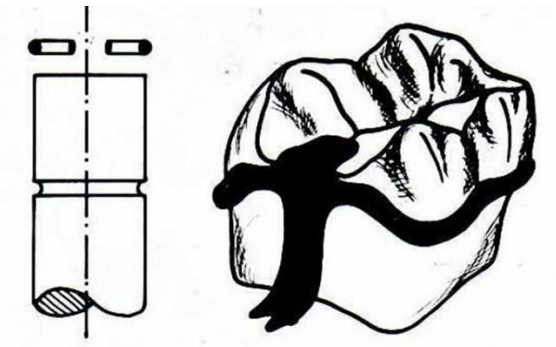
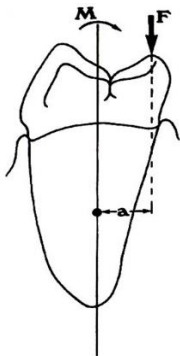
### Statics of skeleton denture - numerical analysis

Prosthesis therapeutics with application of a skeleton prosthesis is a procedure which allows for successful rehabilitation of partially toothless oral cavity provided that it will be properly planned, and the prosthesis construction will be properly designed and made.



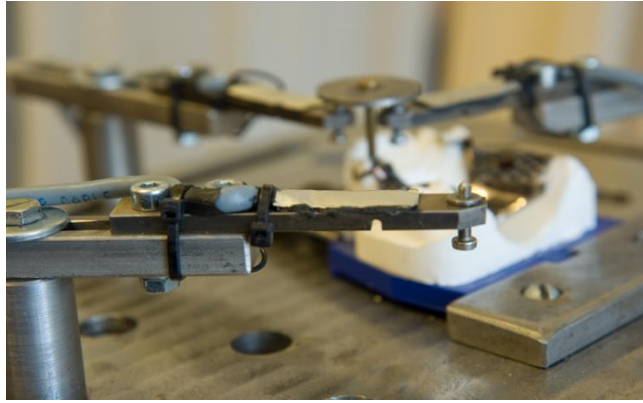
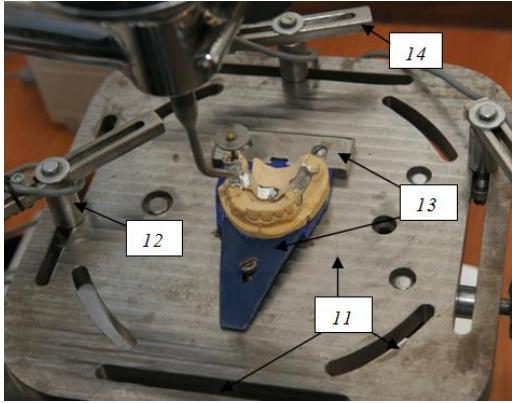
Stabilization of the prosthesis is extremely important since the horizontal stiffness (under horizontal forces) of the tooth fixture is a number times lower than the stiffness in the vertical direction (under vertical forces).

Wrongly designed construction of the prosthesis will result in the incorrect transfer of forces from the prosthesis structure to the supporting teeth.



The present work is focused on the skeleton prosthesis with Ney clasps, which as such is a movable replacement, dentine and belongs to the group of partial prosthesis.

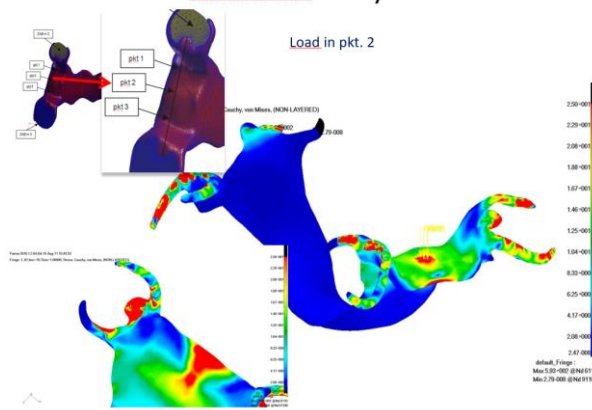
Skeleton prosthesis (denture) was made as a replacement for 5 teeth of the upper jaw, where there is possibility of physiological engagement to carry loading by the remaining teeth in the oral cavity.



## EXPERIMENTAL STAND

In order to imitate most correctly the complex geometry of the denture it has been scanned using the computer tomography technics. Using the obtained set of points (cloud of points) the model of the denture structure has been created using CAD programme which in turn has been later applied for numerical analysis using ANSYS 8 programme.

### Numerical Analysis



The boundary conditions and loading of the denture structure has been modelled in this programme in order to determine the stresses and strain. The results of calculation are presented in graphical form.

### Experimental results compiled with FEM calculations

