**The study on the casting and assembly of equestrian statues from the 20th century. Case Study.**

**1Julieta Daniela Chelaru and 2Tibor Kolozsi**

1Chemical Engineering Department, Babeș-Bolyai University, Cluj-Napoca, Romania.

2Sculpture Department, University of Art and Design, Cluj-Napoca, Romania.

**Abstract:**

The present work focuses on the analysis of casting and assembling two equestrian statues from Cluj-Napoca, Romania.

First, was studied the equestrian statue of Mathias Rex, which was cast in 1902 with a total height of 6.30 m and weight of 7 tons. The statue was cast in several pieces and assembled with screws and rivets. In general, the pieces were made using the classic technology of casting, in sand mould. For parts with more complex details, the "lost wax" method was used. As the thickness of the statue does not exceed 8 mm, it is supported by a carbon steel frame. The second statue analysed was the equestrian statue of Mihai Viteazul placed in the centre of Cluj-Napoca, Romania, since 1976. The statue’s total height is of 7 m and was cast from several pieces that were assembled by screws. The statue was cast with a wall thickness between 15 and 22 mm, without a reinforcement for support. The microstructure and the chemical composition of the both statues and the assembly elements were determined by SEM - EDX analysis and discussed. The results show that the equestrian statue of Mathias Rex is casting from copper – tin alloy (around 8 % Sn). In the case of the equestrian statue of Michael the Brave, the results obtained by analysing different areas show that the statue was cast from inhomogeneous copper alloy from a chemical point of view (60 ÷ 70 % Cu). Base on SEM - EDX analysis both statues were assembled with screws from two types of materials: steel and brass.

**Biography of presenting author**

Dr. Julieta studied the metallurgical engineering at the Technical University of Cluj-Napoca, Romania. She received her PhD degree in 2011 at the same institution. In the present she is lecturer, vice-dean of the Faculty of Chemistry and Chemical Engineering, Babeș-Boyai University and member of the Centre for Electrochemical Research and Non-conventional Materials. She has a relevant background in materials science, metallurgy, metal corrosion, she has published 21 research articles in ISI journals and BDI journals in these fields and numerous participations in scientific events, and her PhD thesis is focus on the restoration and the conservation bronze.

**Details of presenting author to be mentioned in the certificate:**

Name: Julieta Daniela CHELARU

Affiliation: Babeș-Bolyai University, Faculty of Chemistry and Chemical Engineering

Country: Romania

**Other Details:**

Presentation Category: Oral Presentation

Session Name:

Email: julieta.chelaru@ubbcluj.ro

Alternative email: julieta.sabauchelaru@gmail.com

Contact Number:

Twitter/Facebook/LinkedIn:

Recent Photograph: (High Resolution)

