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# Tesla's Fountain – Modeling and Simulation in Ceramics Technology

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**Abstract** -In this paper, we present Tesla's Fountain in ceramics technology reconstruction from basic 3D model, simulation of the engine, light and fluids till the real materialization. As the one of the most important model purposes, we enrich this solution by additional multicolor lights. All of this elements are designed based on Tesla's original patent no. 1,113,716, US patent office, granted Oct,13. In this model we applied ceramics technology based on ceramic materials casting and sintering. At the time when the patent was granted, the metal materials science and technologies were more advanced than the ceramics technology and applications. We performed all materials characteristics analyses and preparation steps based on the one author's patent no. 46121, Serbia patent office, granted 21.12.1991. This is one original two patents solution with complete new over-bridging by the state-of-the-art computer modeling and simulation technology.

**Keywords** - 3d modeling, computer simulation, ceramics, casting, sintering.

## 1. Introduction

The world famous inventor Nikola Tesla, besides his mainstream inventions in the field of electro techniques, also created Fountain in original design solution and materials[1]. The project "Computer Simulation and 3-D Modelling of the Original Patents of Nikola Tesla" in cooperation with "Nikola Tesla Museum" of Belgrade, which represents an institution of national importance, has started in 2009 [2]. Basically, the main purpose of the project is to digitalize, visualize and reconstruct (in real models) the original legacy of the Museum. The part of this paper is based on research within the project entitled "Computer Simulation and Modelling of the Original Patents of Nikola Tesla" and approved by the Ministry of Education, Science and Technological Development of the Republic of Serbia. The first Tesla's patent that was under our attention was Tesla's Fountain patented as *Tesla's Fountain*, no. 1,113,716, US patent office, granted Oct,13,1914 (Fig. 1).

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