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SeS Redox & Catalysis**

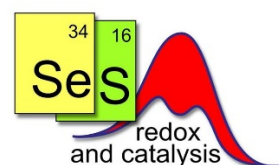
**Department of Chemistry, Biology and Biotechnology
University of Perugia
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ABSTRACTS

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P11: Synthesis of 3-arylidene-2-thiohydantoin as potential anticorrosive agentsPetar Stanić¹, Sandra Jovanović¹, Marija Živković², Biljana Šmit^{1*}

*biljana.smit@pmf.kg.ac.rs

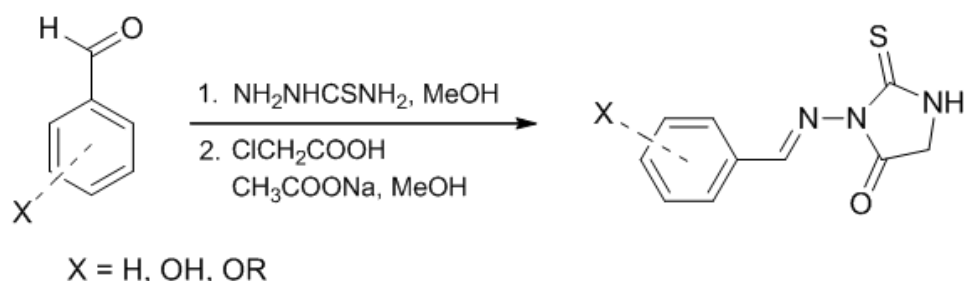
¹Department of Chemistry, Faculty of Science, University of Kragujevac, Radoja Domanovića 12, 34000 Kragujevac, Serbia)²Faculty of Medical Sciences, University of Kragujevac, Svetozara Markovića 69, 34000 Kragujevac, Serbia

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ABSTRACT

Corrosion is an issue that plagues many industries productionwise and costwise. Corrosion inhibitors have been shown to be the most practical, convenient and cost-effective way of dealing with metal corrosion in aqueous environments. Organic compounds with conjugated double bonds and heteroatoms such as nitrogen, sulfur and oxygen exhibit good inhibiting properties since they are easily adsorbed on metal surfaces. However, a negative environmental impact has restricted the use of many such compounds. Environmental awareness, as well as the ever-rising demand of industry necessitates the use of new, environmentally benign corrosion inhibitors. 2-Thiohydantoin is a sulfur containing analogue of hydantoin,¹ a family of drug-based compounds known for their non-toxicity, biological activities and pharmaceutical applications. Some hydantoin derivatives and 2-thiohydantoin itself have been shown to exhibit corrosion inhibition activities.^{2,3} Molecules containing the Schiff base azomethine group have also been shown to exhibit anticorrosion properties.⁴

The aim of this study is a synthesis of a series of 3-arylidene-2-thiohydantoin, containing the 2-thiohydantoin moiety as well as the Schiff base azomethine group, both of which show these desirable properties. The compounds were synthesized via known two step protocol,⁵ utilizing aromatic aldehydes and thiosemicarbazide (Scheme 1). The combination and further conjugation of the thiohydantoin and Schiff base group is postulated to have excellent inhibition properties, all of which will be tested for corrosion inhibition activity. Corrosion inhibition efficiency will be investigated using different electrochemical techniques.

**Scheme 1.****References**

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