

**TITLE**

**Nano preyssler:  
A green and eco-  
friendly nano  
catalyst for  
preparation of  
waterproof building  
nano materials**

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The new development in science and technology has allowed using the latest nano technology to produce eco-friendly organo-silicon products for waterproofing of different kinds of building materials. Silanes and Silane/Siloxanes are known as new class of waterproofing products. These types of products impart water repellency by modifying surface characteristics from hydrophilic to hydrophobic. In order to perform a new contribution to the field of eco-friendly and acid-catalyzed reactions coupled with nanotechnology, our report is here on the preparation of waterproof building materials using nano Preyssler heteropolyacid as a green and sustainable catalyst. This study reports the use of nano Preyssler catalyst as non-corrosive, stable, non-toxic and environmentally friendly instead of corrosive, toxic and harmful acids in waterproofing processes.

In this research, a nano organo-silicon product was prepared in the presence of nano Preyssler heteropolyacid as catalyst. The morphology and size of obtained product characterized with transmission electron microscopy. The obtained nano polymer substantially improved the water repellency of the building materials. The product in nano size becomes part of the building material and makes it highly water repellent. Rilem Test was performed for building materials and waterproofing was observed for treated samples. Simple experimental set up and procedure makes this method a useful addition to the methodologies that require solid catalysts with strong acidic strength and highly thermal stability.

**Biography**

Majid. M. Heravi was born in 1952 in Mashhad, Iran. He received his BSc degree from the National University of Iran in 1975 and his MSc and PhD degrees from Salford University England in 1977 and 1980. He completed his doctoral thesis under supervision of late Jim Clarck in Salford University. He started his career as a research fellow in Daroupakksh (a pharmaceutical company) in 1981 Tehran, Iran and joined as an assistant professor to Ferdowsi University of Mashhad. Iran. In 1999 he moved to Alzahra University Tehran, Iran as professor of chemistry where he is still working in. He has previously been a visiting professor at UC Riverside, California, USA and Hamburg University, Hamurg, Germany. His research interests focus on heterocyclic chemistry, catalysis and organic methodology.