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## RADIOLYTIC OUTPUT OF HYDROGEN AS ENVIRONMENTALLY FRIENDLY ENERGY VECTOR

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### Abstract

This study deals with the radiolytical decomposition of water molecules, in the presence of some catalysts, getting out hydrogen as unpolluting and cheaper energy vector. Instead of the spent nuclear fuel elements taken out from nuclear power plants, as irradiation source it was used the <sup>60</sup>Co radionuclide having a specific activity of  $1.1 \cdot 10^5$  Ci. It was observed that the radiolytic yield of resulted molecular hydrogen from water radiolysis in the presence of used catalysts decreased as:  
 $\text{NH}_4\text{-ZSM-5} > \text{Pt}^{2+}\text{-ZSM-5} > \text{Pt}^0\text{-MCM-41}$

*Key words:* catalysis; hydrogen production; mass spectrometry; radiolytical yield; water radiolysis

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