

Formation of composite in the icosahedral phase of the quasicrystal with graphene in the production of hydrogen

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The development of new materials with different properties and industrial applications is being explored and investigated. Further, it is necessary to obtain materials with good physical and thermodynamic properties such as: high hardness, low thermal and electrical conductivity, good corrosion resistance and high mechanical resistance. The composites are materials used with wide variety and purposes in several industrial areas. They are produced and designed to be more resilient, light and functional, with unique properties and cost-effective cost. But it should be noted that global technology has generated great diversity in the market and globalization of the economy; however, an intense environmental impact. Hydrogen is one of the ideal source of electric power transformation, thus being able to be used in fuel cell systems for power generation efficiently. The structure of the films from the metal matrix plus graphene oxide, observes a barrier in the formation in the layers. Researches that were developed with quasicrystalline alloys plus graphene / graphene oxide addition, have shown that

this formed composites are excellent for hydrogen storage and other industrial applications. In this work, the use of physical-chemical characterization techniques such as; XRD to analyze the formation of the composite between the quasicrystalline alloy and graphene, scanning electron microscopy-SEM, allowing the study of the surface microstructure of the composite and the other experimental analyzes to evaluate the material produced.

Speaker Biography

Reza Jamshidi Rodbari is a Doctoral in Material Science and Engineering at the Federal University of Pernambuco, Brazil. He is the Member of the board, Executive Director at R & C Jam Catalyst Industrial Group, in the sector of energy sustainability and petrochemical industry. He has contributed himself by participating in events like International Congresses on Petrochemicals and Chemical Engineering in 2013 at San Antonio and also in 2014 at Las Vegas. He was the part of the organizing committee of the World Conference and Expo on Petrochemicals and Natural Resources during 2018 at Prague. He has two books with ISBN, an International Patent in the Catalyst Area and has 35 article publications.

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