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Study of Nano Coating on Molybdenum by Sol- Gel Process

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Abstract : Nano coating are coating that produced by usage of some components at Nano scale to obtain desired properties. Nanostructured coatings offer great potential for various applications due to their superior characteristics that are not typically found in conventional coatings. In order for steel to be considered low carbon steel, there are certain characteristics it must meet. For instance, the steel has to have less than .3 percent carbon in its total makeup to be considered low carbon. Low carbon steel also contains pearlite and ferrite as major components. Low carbon steel is generally used straight from the forming process, whether that process is hot forming or cool forming, because that's when it's most workable and easiest to form. There are several cladding techniques such as hard facing, coating, and surfacing techniques, to improve corrosion and wear properties of base materials. Cobalt base alloys / Nickel based alloys are the most common clad materials used to improve the corrosion and wear properties of the base materials, Nano-coating of these valve material by Molybdenum. But since it is a material used for high temperature-pressure applications it is necessary to select a proper cost effective coating. Molybdenum being an apt material for corrosion resistance and high mechanical properties is synthesized and used for coating. The specimen was dipped in electrolyte and a potential of 4.1V. The specimen is coated in the electrolyte and the coating thus formed is characterized using XRD analysis, and then the coating is tested for its corrosion potential.

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