

Significance of Traditional Casting Techniques in Nepalese craft industry and its prospects in Fabrication of Engineering Products

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Abstract

Metal casting has a long and rich history in arts and crafts industry of Nepal as these techniques have been used extensively by sculptors in making deities of Hindu and Buddhist gods as their ancestral profession. Metal sculptures, exclusively the elite Newars of Kathmandu valley, have carried the techniques from generation to generation for centuries. The date of the earliest metal work from the Nepal valley is uncertain, the sculpture of a standing Buddha in the Cleveland Museum, dated 591 CE, is the earliest inscribed and dated metal sculpture known to us. The Casting techniques being similar to the modern day casting, several special characteristics of this occupation as it is practiced today makes it remarkable. Historically, unique metal alloys such as “Panchadhatu” and “Asthadhatu” were extensively used by Nepalese sculptors and crafts men in making holy deities. But in present days, red brass and yellow brass are widely using in casting industry of art and craft. “Lost wax” casting or investment casting has been used commonly in the sculpture or craft industry. However these techniques have not been used abundantly for engineering purposes. Although Turbine casting in Nepalese foundry by applying Investment Casting Technique has been already done with successful execution of 2KW Francis Runner at Turbine Testing Lab, Kathmandu University in 2012, manufacturing industries are skeptical in implementing the traditional casting technique for various reasons. The research gap hence is to find out the application of the traditional casting techniques in manufacturing engineering products and possibility to utilize more of these techniques for fabrication of more engineering products. Furthermore the detail study on the use of unique alloys such as “Panchadhatu” and “Asthadhatu” and their significance are of meticulous interest on this project.

Keywords: Metal casting, Sculpture, Metal alloys, Panchadhatu, Asthadhatu, Lost wax technique