

# Analysis of Correlation between Korea Traditional Chilbo Enamel and Metal Substrate

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## Abstract

Korean Chilbo, one of the various traditional metal crafts that have been steadily handed down, is an area that has been passed on by minority craftsmen. And it is included in various artifacts such as Norigae (coat strings), Garakji(finger ring), Tteoljam, Binyeo (ornamental hairpin), Eunjangdo (silver knife), and cosmetic containers, etc in through the Korean traditional techniques. There was once a period of stagnation, with the technology of Korean chilbo being cut off by historically difficult situations. The artisans' efforts to restore tradition have led to the restoration of Korea Chilbo technology, which applies the Korean traditional crafts and shape. Recently, efforts have been made to break away from monotonous jewelry products and apply them to various products such as bags, watches and IT products as a field of modern crafts through the combination of practical value and emotional design. It is very difficult to enter the modern industrial market if the traditional chilbo is produced with the efforts and experience of a few craftsmen in a situation where the demand for popularization and industrialization is demanded steadily. Therefore, it is necessary to secure reproducibility of products for popularization and industrialization. And to diversify the products to be applied, it is necessary to increase the types of metal substrates that can be applied as one to address them. For this purpose, it is necessary to understand the relation between the chilbo enamel and the metal substrate.

In this work, the residual stress measurement method of plating was applied to analyze the residual stress between enamel and metal substrates. It is expected that this method of residual stress measurement will contribute to the development of new enamel and the expansion of the applied metal substrate.

**Keywords:** *Korean chilbo, metal substrate, thermal behavior, sealing, enamel*

## References

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## Biography

Jae Young Park joined Research Institute of Advanced Manufacturing Technology, Surface R&D Group, Korea Institute of Industrial Technology (KITECH), in 2010 as a senior researcher. He received his Ph.D. from Inha University, the Republic of Korea. He has been working on a high-quality protective layer on various kinds of materials and nanoparticle synthesized by wet-process such as sol-gel.