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|  |  | Cultural Heritage Administration NEWS  |
| Division: The National Research Institute of Cultural Heritage, Restoration Technology Division Contact person: **Park Jongseo** (042­-860-9341), **Jeong Seonhwa** (042-860-9344) |  |  |

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| Publication of『Our Paper, *Hanji* -Analysis-』 by National Research Institute of Cultural Heritage- Including Research Outcomes and Specimens from Scientific Tests and Analysis on 48 Kinds of *Hanji* by Different Paper-making Techniques - |

The National Research Institute of Cultural Heritage (NRICH, Director General Kim Yeonsoo) under the Cultural Heritage Administration (CHA) of Korea published a report, ‘Our Paper, *Hanji* -Analysis-’ including the research outcomes with specimens by conducting the scientific test and analysis on 48 kinds of Korean paper, *Hanji* which was manufactured with different raw materials and paper-making techniques.

*Hanji* is the *Suchoji* which is manufactured by our own Korean technique, and it has been evaluated as the excellent paper with good stability and preservability in the world. The NRICH has been scientifically demonstrating its originality and superiority since 2017 and conducting the research on the quality standard of *Hanji* as the repair and restoration paper for cultural heritage which can be stably used in the restoration workplaces of cultural heritage in overseas countries as well as in Korea.

**\* *Suchoji*: Hand-made paper with a sheet-formation screen**

This publication is the 2nd *Hanji* specimen book as one of research achievements in the quality standard of *Hanji* for the repair and restoration for cultural heritage, following ‘Our Paper, *Hanji* -Process Research-’ which was published in 2020. In this publication 48 kinds of *Hanji* specimens manufactured by giving variety to fiber of Dak (paper mulberry), lye cooking materials, mucilage of hibiscus roots and *Choji* (sheet-formation)techniques are included. Furthermore, each result of the analysis on characteristics such as the tensile strength which has influences on stability and preservability of *Hanji* as well as fundamental physical properties such as the color and homogeneity can be identified.

**\* Fibers of *Dak* (paper mulberry): Fiber formed between woody parts and bark of *Dak* tree as main material of *Hanji***

**\* Lye cooking material: Material which is added when boiling fiber of *Dak* such as lye to remove impurities**

**\* Mucilage: Material which is extracted from hibiscus roots and added to help spread of fiber of *Dak* and to prevent sediment**

**\* Choji technique: Sheet-formation technique of *Hanji* by using a *Hanjibal* (sheet-formation screen) such as *Huilimttuigi* and *Gadumttuigi***

**\* Tensile strength: Resistance of paper before breaking when a certain width of paper is pulled in the opposite direction**

From the research outcomes by the NRICH under CHA, it was turned out that *Hanji* made with domestic *Dak* as main material is generally stronger than *Hanji* made with imported Dak. In addition, the *Hanji* made by *Huilimttuigi* passing water flow through various direction in a traditional way showed less difference of directional strength, compared to the *Hanji* made by *Gadumttuigi* passing water flow through a certain direction in an improved way. It can be identified that traditional *Hanji* has superiority in strength and dimensional stability.

**\* *Gadumttuigi*: Paper-making technique using a mould to trap fiber with a sheet-formation screen**

**\* *Huilimttuigi*: Paper-making technique using a sheet-formation screen without a mould**

**\* Dimensional stability: Physical property to maintain its original dimensions and shapes against environmental changes by temperature and humidity**

On the other hand, the *Gadumttuigi* technique using sodium carbonate and sodium hydroxide as the lye cooking material and PAM (polyacrylamide) as the mucilage showed more improved ‘homogeneity’ signifying same properties in compositions and characteristics and ‘whiteness’ signifying the degree of whiteness on an object than the traditional technique.

**\* PAM(polyacrylamide): Synthetic polymer substance with viscosity**

The research outcomes were presented through the academic symposium of research on traditional materials, ‘Values and Future of Traditional Materials’ in September of 2021, and those were utilized to prepare the quality standard (plan) of *Hanji* suitable for the repair and restoration of cultural heritage. Also, the NRICH is taking steps to register 4 kinds of Horizontal Standard, 5 kinds of Procedure Standard and 2 kinds of Product Standard as Korean Industrial Standards (KS) for *Hanji* newly suggested focusing on defining terms and scope of *Hanji*.

This publication is open to the public and available to everyone from the homepage of NRICH research publications (http://portal.nrich.go.kr) and the homepage of CHA (www.cha.go.kr).

 The National Research Institute of Cultural Heritage under the Cultural Heritage Administration of Korea continues contributing to the restoration for original forms of cultural heritage and its value improvement by providing scientific information of *Hanji*. And through the comparison and analysis on paper-making techniques with *Seonji* of China and *Hwaji* of Japan, it is planned to present the its own originality and tradition of *Hanji* scientifically.