

Review of the Fabrication Techniques of Metal Textile Jewellery

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Abstract

Textile jewellery is a type of jewellery that has a structure or texture similar/identical to textile products. Although the practice of textile jewellery is evident, there is a lack of a comprehensive overview of the techniques, methods, and materials involved. The confusion on how to apply different fabrication techniques creates difficulty in making metal textile jewellery. The review, therefore, summarises, classifies, and compares the types, techniques, materials, and structures used to make metal textile jewellery. The analysis results show that it is essential to understand the effects produced by different processes. Textile jewellery structures with similar styles can be produced by very different processes, which can be easily confused. This paper clarifies the differences between the processes to help designers more quickly and accurately select the right process for making jewellery.

Keywords: Textile; techniques; jewelry metal; twisting; filigree; casting; openwork; repoussé; chasing; knitting; crochet; weaving; basketry; knotting

1 Introduction

Many forms of textile jewellery are diverse in structure, texture, and material, including different fibres and metals [1]. Metal textile jewellery is made of metals such as gold, silver, and copper that can be made into wire or sheets to imitate the structure and texture of textiles with metalwork. They can also be made directly with textile fabrication techniques. Although there have been mentions of textile metal jewellery in previous studies, it is often classified with other types of jewellery. It lacks depth in the breakdown of the fabrication process. To resolve this research gap, this review critically analyses the techniques used to make textile jewellery by comparing different fabrication methods.

The history of metal textile jewellery and metalworking and textile fabrication techniques are reviewed through a comprehensive search of academic databases. The criteria for citing literature were (a) the history and techniques of metal textile jewellery. (b) documented insights into the creation and practice of metal textile jewellery pieces. (c) original publications and papers. The

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literature was excluded if the classification of the metal textile jewellery process presented was unclear. The literature review compares the techniques in a matrix table including their textures, applicable tools, and materials. The matrix can help designers better understand the advantages and limitations of these techniques in the creative process.

The integration of existing research shows that metal textile jewellery techniques can be divided into two categories: metalworking, which includes twisting, filigree, casting, openwork, repoussé, and chasing, and secondly, textile fabrication techniques, such as knitting, crochet, weaving, basketry, and knotting. The results of these studies can help designers better understand the styles of metal textile jewellery and distinguish the processes to aid them in the design process.

2 Common Fabrication Techniques of Metal Textile Jewellery

There are many different techniques used in metal textile jewellery, and some of them are often confused. In many literatures, all metal textile jewellery techniques are often called “woven” without explaining the specific technique. For example, Mary Hettmansperger’s “Fabulous Woven Jewelry: Plaiting, Coiling, Knotting, Looping & Twining with Fiber & Metal” classifies Knotting as Basketry, and Arline M. Fisch’s “Textile Techniques in Metal: For Jewelers, Textile Artists & Sculptors” Knotting is a separate process category. Therefore, this review examines the specific production methods of each technique and classifies them more accurately by understanding the historical overview of the process and comparing the characteristics of the process jewellery. According to the literature, metal textile jewellery techniques can be divided into two categories. The first category is the process of imitating the texture and structure of textiles with metalwork, such as twisting, filigree, casting, openwork, repoussé, and chasing. The second category is textile fabrication techniques, mainly including knitting, crocheting, weaving basketry, and knotting [2].

2.1 Metalwork

2.1.1 Twisting

Twisting uses a single wire or different thicknesses and numbers of wires to form a shape through multiple twisted knots. It is the earliest metalworking process to imitate the texture and structure of textiles with metal wires [3]. The number of strands of wire changes the specific shape. Twisted wire can be used to make a whole piece of jewellery or decorate a part. A typical example is the Malia gold pendant, produced between 1 800 and 1 650 B.C., Crete, the bee’s head in a ball shape knotted with gold wire twisted (Fig. 1). From the 6th to 4th centuries B.C.E., four squares of twisted gold wire are typical examples of gold textile jewellery from Iron Age Europe (Fig. 2). A variety of cultures used this technique of single or multiple strands of gold in the 1st millennium B.C.E. and was especially common in the Celtic cultures of Western Europe. The twisted wire technique was also used in the most popular rings of Etruscan in the 4th century B.C. These rings had a metal spindle in the centre with a reversible metal frame on top, and a thin wire was often wrapped around the metal spindle next to the reversible frame to hold them in place (Fig. 3). The silver wire bracelet from the Roman period, 30 B.C.-A.D. 364, was found in the Egyptian Delta, consists of two thick silver wires with a finer wire wrapped around them, which means that