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Journal	Advanced Materials Research (Volume 322)
Volume	Advanced Research on Material Science, Environmental Science and Computer Science
Edited by	Helen Zhang and David Jin
Pages	377-380
DOI	10.4028/www.scientific.net/AMR.322.377
Citation	Cheng Qian, 2011, Advanced Materials Research, 322, 377
Online since	August, 2011
Authors	Cheng Qian
Keywords	Chromed Leather Waste, Micro-Suede Fabric, Properties, Ultra-Short Collagen Fiber
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Advanced Materials Research Vol. 322 (2011) pp 377-380
Online available since 2011/Aug/16 at www.scientific.net

doi:10.4028/www.scientific.net/AMR.322.377

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Keywords: Chromed leather waste; ultra-short collagen fiber; micro-suede fabric; property.

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Introduction

Traditional leather industry in China mainly uses wet blue process. During leather make up process, the finished leather only takes up about 50% of the original fresh leather, others remained can only be a waste [1]. We are a leather making big country, there are about 1.4 million tons such leather wastes produced (including chromate wastes), almost half of the world productivity. Thus although leather industry is developing quickly, solid wastes induced also increased vastly. Among those, most of them are wet blue processing wastes, such as solid wastes and powder; the main ingredients of them are collagen proteins. Nowadays, there are two methods of utilizing solid leather wastes, which are chemical and physical methods. For physical measure, the earliest is to produce regenerated leather. This method firstly shatters the wastes into small or very short collagen fibers. Then modified papers making process was used to distribute these short fibers, and in the same time large amount of adhesives were filled into the short fibers as bonding media. After web making, the dryer was used to make complete artificial leather. Because too many adhesives were used in the production process, this will be a heavy pollution to the environment, and until now this method had been almost abandoned in most developed countries [2-4].. Another method is to use the powered state solid wastes as fertilizer and feedstuffs. Although the method seems a good way, as the solid wastes mainly contents are collagen, for making fertilizer, the most needed composition for plants are nitrogen which is very low in the wastes, even lower than ordinary fertilizer. So the wastes don't have any advantages for making fertilizer even if it has a cheap price. In recent years, another research points are utilizing the wastes for rubber fillers and making collagen paper. For the latter, short waste fibers were used together with pulp. From the research show that the short waste fiber usages are not more than 15%, other parts are pulp fiber. Chemical method is mainly to use acid, alkali, enzymes and oxidation [5-6], the main purposes are extracting gelatin, collagen protein, making retanning agent, coating agent, refatting agent and protein fillers [7-9]. Although the finished products have high added values, the whole production process is complex and with high cost, besides the production pollute the environment severely, and also the utilization ratios are lower, which led to most of the solid wastes hadn't been utilized properly.

As those solid wastes are composed of collagen fibers, no doubt they can be utilized with textile methods. From textile point of view, the wastes can not only be utilized with high efficiency, but also with little pollution to the environment, besides batch production can be realized more easily. According to the above analysis, we did preliminary experiments in this respect.