



Fibers Don't Fib!

**An Introduction to Fiber
Analysis**

School Year 2023-2024

Introduction

- Fibers, strands of thread that make up yarn is all around us.
- Fibers make up thousands of products, including clothing, upholstery, carpet, rope, and building components.
- As you interact with these products, loose fibers become attached to your body and clothes.

Introduction Continued!

- When you enter a room, you pick up some of the fibers present in the room.
- You also drop some of the fibers you are carrying.
- Fiber evidence can often provide information about where people have been.

Tracking the Source

- For fiber evidence to be useful in a crime scene investigation, scientists must be able to narrow down its origin to one or two sources.
- Most clothing, upholstery, and carpet are mass produced, which is sometimes difficult to do.
- Only under unusual circumstances can a fiber positively identify a person.

Fibers Are Divided Into Two Large Groups: Natural and Man-made.

- The earliest people wore animal skins and furs for clothing.
- Since the stone age, people have been weaving fibers from plants and animals into fabrics for clothing.
- Wool, silk cotton and husks of some dried fruits are examples of natural fibers.
- From these plants and animals people have learned to form individual threads that can be woven into large pieces of cloth.

Industrial Revolution

- By the time of the IR, weaving was a mechanized process that produced plenty of fabric for a growing population and its needs.
- However, the fabric industry still depended on nature for its raw materials.
- Drought, flooding, disease, and cold weather could badly damage the fiber crops and reduce the amount of cloth available.

Made in the Laboratory

- After the IR, Scientists began searching for a fiber that could be made in the lab.
- Such a discovery would provide manufacturers with a constant supply of fibers.
- ~100 years ago, the first man-made, or synthetic, fiber was created in the lab and named "Rayon."
- Rayon was made by chopping and chemically treating wood pulp and cotton to produce a soft mass of cellulose. This cellulose was then forced through tiny opening in a spinnerette to form threads.

From Past To Near Present

- Until the 1970s, more natural than synthetic fibers were used as raw materials to make products.
- At the present time, however, about twice as much synthetic fiber than natural fiber is used to make fabric.
- Many types of synthetic fibers have been invented since the appearance of Rayon.

Therefore...

- Man-made fibers are generally classified into the following two groups, depending on whether or not they originated from cellulose:

A) Fibers derived from cellulose include rayon and acetate.

B) Fibers that are not derived from cellulose including nylon, polyester, acrylic, and spandex.

Thank You for Your Attention.

- Refer to the “Plan of the Week” and or <http://wardisiani.tripod.com> for upcoming assignments.