United States
Consumer Product Safety Commission

November 26, 2024

Via PAL

[redacted]@gmail.com

RE: Freedom of Information Act Request #24-F-00567: Under the Freedom of Information Act, I am requesting any documents, electronically stored information or objects, and to permit inspections, copying, testing, or sampling of the material: all scientific testing done on the fiberglass (or "glass fibers") from mattresses from the CPSC. (Date Range for Record Search: From 1/1/2018 To 8/9/2024).

Dear Mr.:

Thank you for your Freedom of Information Act (FOIA) request seeking the above-referenced information from the U.S. Consumer Product Safety Commission (CPSC). CPSC's Office of Risk Reduction (EXRR) conducted a search for records associated with scientific testing done on fiberglass or glass fibers from mattresses for thew period January 1, 2018 through August 9, 2024. In response to your request, please find copies of the responsive records resulting from the search.

CPSC considered the foreseeable harm standard when reviewing these records.

If you need any further assistance, or you would like to discuss any aspect of your request, please contact me, CPSC's FOIA Public Liaison, via email or at 1-800-638-2772.

Fees. There are no fees assessed fees for processing this request.

U.S. Consumer Product Safety Commission
4330 ::ast-West Highway
Bethesda, MD 20814
cpsc.gov

National Product Testing & Evaluation Center
5 Research Place
Rockville, MD 20850

Sincerely,

ROBERT DALTON Digitally signed ROBERT DALTOI
Dato: 2024.11.26 09:08:55 -05'00'

Robert Dalton
Supervisory Attorney
Office of the General Counsel
Division of Information Access
(301) 504-7246
rdalton@cpsc.gov

Enclosures: Mattress Fiberglass Test Plan (4pages)
Fiberglass Analysis of Ticking and Barrier Fabrics in Mattresses (24 pages)
EXRR Image Files (16 pages)

From: [redacted]
To: Dalton, Robert
Subject: Re: CPSC FOIA Request 24-F-00567 - Clarification requested
Date: Thursday, August 8, 2024 6:46:36 PM

Hi Robert-

I apologize fo not originally including a time frame. I submitted a message from the online portal after I had sent the original request to provide a date range. Please provide requested data from January 2018 to the present.

Thank you so much,
[redacted]

On Wed, Jul 31, 2024, 6:07 AM Dalton, Robert <RDalton@cpsc.gov> wrote:

> Good morning, [redacted],
>
> We received your June 15, 2024, FOIA request for "any documents, electronically stored information or objects, and to permit inspections, copying, testing, or sampling of the material: all scientific testing done on the fiberglass (or "glass fibers") from mattresses from the CPSC." The request, however, did not include a time frame for the records sought. A proper request for records "must reasonably describe the records requested" by including search terms such as "dates, title, file designations, and other information which may help identify the records." 16 C.F.R. § 1015.3(b). In cases where such information is lacking in a request, the requestor must clarify the search terms so that the request becomes manageable. *See* 16 C.F.R. § 1015.3(c).
>
> An agency is not required to conduct an expansive search for a voluminous amount of records. Courts have recognized that requests must be reasonably described so as not to require an agency to conduct unreasonably burdensome searches for records, and further that the FOIA was not intended to reduce agencies to full-time investigators on behalf of the requesters, or to allow requesters to conduct "fishing expeditions" through agency files. *Immanuel v. Sec'y of the Treasury*, No. 94-884, 1995 WL 464141 at *1 (D. Md. Apr. 4, 1995), aff'd, 81 F.3d 150 (4th Cir. 1996); *see also Dale v. IRS*, 238 F. Supp. 2d 99, 104-05 (D.D.C. 2002).
>
> In your reply, please provide a reasonable period for the records you are seeking. If you need assistance in stating the time period covering the records sought in your request, please contact me, CPSC's FOIA Public Liaison, via email.
>
> *Right to Mediation.* Additionally, you may contact the Office of Government Information

Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001; email: ogis@nara.gov; telephone: 202-741-5770; toll free: 1-877-684-6448; fax: 202-741-5769.

Thank you.

Robert J. Dalton

Supervisory Attorney, Division of Information Access

U.S. Consumer Product Safety Commission | Office of the General Counsel

4330 East West Highway | Bethesda, MD 20814

Office: (301) 504-7246

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FOIA Request 1260691

The following list contains the entire submission submitted June 15, 2024 12:50:01pm ET, and is formatted for ease of viewing and printing.

Contact information

First name	[redacted]
Last name	[redacted]
Mailing Address	[redacted]
City	[redacted]
State/Province	[redacted]
Postal Code	[redacted]
Country	United States
Phone	[redacted]
Email	[redacted]

Request

Request ID	1260691
Confirmation ID	1260106
Request description	Under the Freedom of Information Act, I am requesting any documents, electronically stored information or objects, and to permit inspections, copying, testing, or sampling of the material: all scientific testing done on the fiberglass (or "glass fibers") from mattresses from the CPSC.

Supporting documentation

Fees

Request category ID	commercial
Fee waiver	no

Expedited processing

Expedited Processing	no

Additional information

attachments_supporting_documentation	
fee_amount_willing	0

COVER SHEET -- NPTEC TEST PLAN

Project ID / PSA Number	
Test Plan Title	Mattress Fiberglass Analysis
Test Plan Revision Date	1/3/24
Test Location	Cyclic Lab
Target Test Time Frame	January-February, 2024
Test Plan Authors	Justin Jirgl, Lisa Scott JUSTIN JIRGL Digitally signed by JUSTIN JIRGL Date: 2024.01.03 14:01:03 -05'00'
Peer Review / Approval	Lisa Scott Lisa Scott Digitally signed by Lisa Scott Date: 2024.01.03 13:26:11 -05'00'
NPTEC Safety Engineer Approval	Dwayne Davis Dwayne Davis Digitally signed by Dwayne Davis Date: 2024.01.04 07:31:06 -05'00'
NPTEC Chemical Safety Approval	n/a
NPTEC Fire Safety Approval	n/a
Division Director Approval	Allyson Tenney, LSE Allyson Tenney Digitally signed by Allyson Tenney Date: 2024.01.24 12:52:35 -05'00' Mike Nelson, LSM Michael Nelson Digitally signed by Michael Nelson Date: 2024.01.24 13:40:21 -05'00'
AED Approval	Andrew Stadnik

Project Summary

Project Number		Test Plan Date	1/3/24
Project Name			
Evaluation Req.	Impact mattresses to determine if fiberglass liberates/breaks		
Personnel needed to assist in set up / testing /break down	Adam Howie, Rebekah Kempske, Lisa Scott, Justin Jirgl		
Requestor	Justin Jirgl	PSA Due Date	None

Background and Test Goal

Reported incidents of fiberglass exposure to consumers attributed to mattresses have increased dramatically over the last 4 years. Fiberglass is blended with other fibers as an interior component in mattresses which is used to meet flammability requirements. Consumers are alleging dermatological and inhalation hazards experienced by exposure to fiberglass. Goal of testing is to determine if fiberglass is being shed from any of the mattresses or transferred to other mattress components during cyclic durability testing. If liberated, the resulting fiberglass fibers will be measured to determine if breakage occurred and whether the fibers are small enough to be inhaled or cause dermal irritation.

Test Details

Standard Number		ASTM F1566-21	
Standard Name		Standard Test Methods for Evaluation of Innersprings, Boxsprings, Mattresses or Mattress Sets	
Test #	Samples	Section	Description
7	6	ASTM F 1566-21 Section 9	Impact mattresses with platen using a modified test procedure from Section 9 of ASTM F1566-21
Goal			
Determine if artificially aging a mattress through cyclic impacts will cause fiberglass breakage and/or liberation from the interior fiberglass barrier..			
Test Method Summary			
Preparation:			

Cut 2 trifold mattress samples into 4 segments for testing and place each of the resulting segments into plastic mattress bags. Place all other complete unsegmented mattresses in plastic mattress bags and tape ventilation holes on both sides with packing tape. Setup test apparatus.
Test: See below.
Safety Considerations: Caution should be used when opening the mattress bags after impact as loose fiberglass fragments could be present. An N95 mask or respirator should be worn when the plastic bag containing the mattress/mattress segment is opened after testing due to the potential for small fiberglass particles.
Equipment List
• Safety glasses • N95 mask or respirator • Plastic mattress bags • Mattresses • Cyclic Impactor • Platen
Expected Costs and Timing
• Testing should take approximately 3-4 weeks • Materials are on hand.

1. Equipment
   1.1. Cyclic Impactor with platen installed
   1.2. Plastic mattress bags
   1.3. Safety Equipment (Safety glasses, safety visor, lab coat, gloves and N95 mask or respirator)
2. Test Methods
   2.1. Sample handling. Ensure seal on plastic mattress bag is complete. Be cautious when moving the mattress/mattress segment after impacting occurs. Any rip or tear in the mattress bag could cause the release of fiberglass particles. There is less concern prior to testing as the mattresses have not been impacted.
   2.2. Measurements
      2.2.1. Record whether fiberglass was liberated during testing. (Y/N)
   2.3. Photography.
      2.3.1. Photograph each segment or complete mattress before and after impacting
      2.3.2. Place mattress in a standard photographic setting, including repeatable lighting, orientation, and distance to camera
      2.3.3. Incident and/or impacted mattresses will remain in mattress bags for photographs
         2.3.3.1. If visible, photograph any fibers which have been liberated
   2.4. Test setup

2.4.1. Place mattress/mattress segment on a flat, level, rigid surface beneath cyclic impactor
2.4.2. Identify the midpoint with respect to the sides and quarter-point with respect to one end of the mattress
2.4.3. Identify location on the mattress to be impacted with a permanent marker and align the platen above
2.4.4. Place a towel over the area to be impacted such that it covers the complete area where impacts will occur

2.5. Test Method
2.5.1. Raise the platen to the top of the stroke, 6” above the pre designated spot on the upper surface of the mattress
2.5.2. Drop the platen onto the mattress surface
2.5.3. Repeat the impacts at 15 strokes/min in the same location on the mattress until 10,000 cycles is reached
2.5.4. Move mattress to Flam Lab using a cart
2.5.5. Place mattress on table with the impacted side facing down
2.5.6. Place 2 pieces of tape near where the impacts occurred approximately 6” apart and outline the tape using a permanent marker
2.5.7. Open mattress bag using box cutter or razor between the 2 outlined pieces of tape
2.5.8. Create a loop of packing tape with adhesive side facing outward and place the loop around a gloved hand
2.5.9. Move hand into the 6” cut in mattress bag and move hand up and down against the surface of the mattress and mattress bag 6 times at locations where fibers were potentially emitted
2.5.10. Remove gloved hand and place the resulting tape loop into a plastic bag labeled by sample
2.5.11. Reseal mattress bag with mattress/mattress segment contained using packing tape to cover the 6” cut

3. Analysis

3.1 Provide bag with tape and fiberglass to both LSE and LSC for additional evaluation to determine presence, fiber identification, and size of any fiberglass fibers

3.2 HS to review LSC/LSE findings to determine if any emitted fiberglass presents a hazard

United States
Consumer Product Safety Commission

Fiberglass Analysis of Ticking and Barrier Fabrics in Mattresses

Paige Witzen, Textile Technologist

July 2023

This report was prepared by the CPSC staff. It has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.

Table of Contents

Introduction

CPSC has received reports from consumers that fiberglass moves out of their mattresses when the outer ticking cover is removed washed and replaced back on the mattress. Staff have two mattresses, one being an incident mattress to examine to see if fiberglass fibers are either moving through the ticking or breaking off during the removal of the ticking cover. This report looks at the multiple ticking fabrics and the barrier fabric to see if there is evidence of the fiberglass fibers breaking and moving out of the mattress.

Materials and Methods

Materials Analyzed

CPSC staff have two mattress samples to analyze and see if fiberglass is moving out of the mattress.

Sample 22-800-1442-03

Sample 22-800-1443-03

For both mattresses, samples of the ticking and barrier fabrics were analyzed. For the ticking the outer surface, inner surface and fill fibers were analyzed.

Method of Analysis

All the fabrics were observed under the Nikon Polarizing Light Microscope. They were observed at 40x, 100x, 200x, 400x magnification. The fabrics were also observed under red plate to better identify fibers.

For the two barrier fabrics the diameter was measured. Only sample 22-800-1142-03 barrier fiber lengths were able to be measured.

Results

The microscopic photos of the different fabrics are shown in Figures 1-19.

Figure 1: 22-800-1442-03 Ticking Fabric (A-B)

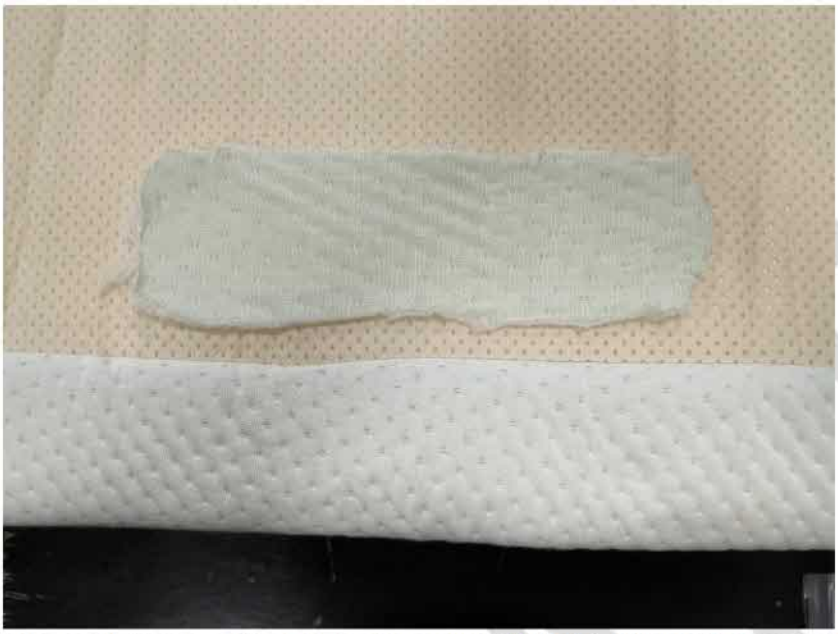


FIGURE 1-A: TICKING, OUTER SURFACE (WHITE), INNER SURFACE (MINT) AND FILL FIBERS

FIGURE 1-B: TICKING, CLOSE UP OF OUTER SURFACE (WHITE), INNER SURFACE (MINT) AND FILL FIBERS

Figure 2: 22-800-1442-03 Ticking Fabric 40x (A-B)

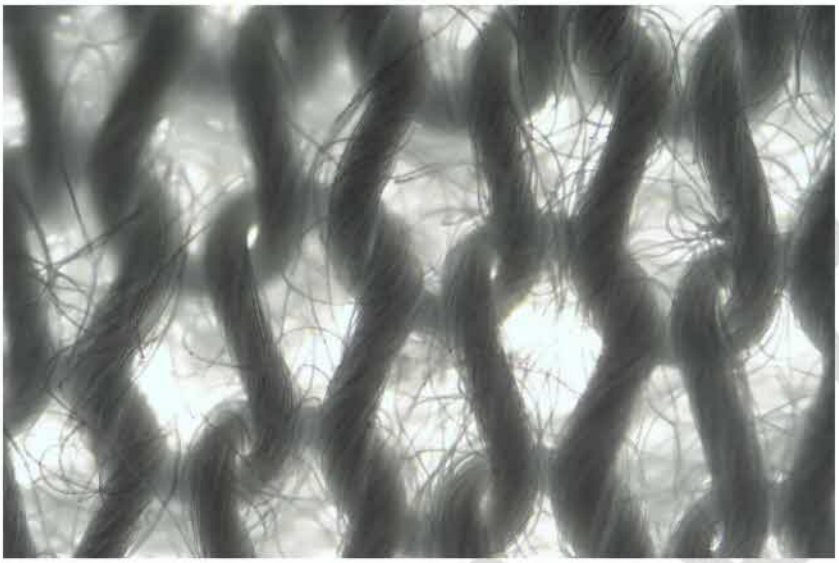


FIGURE 2-A: TICKING FABRIC, OUTER SURFACE (WHITE), 40X

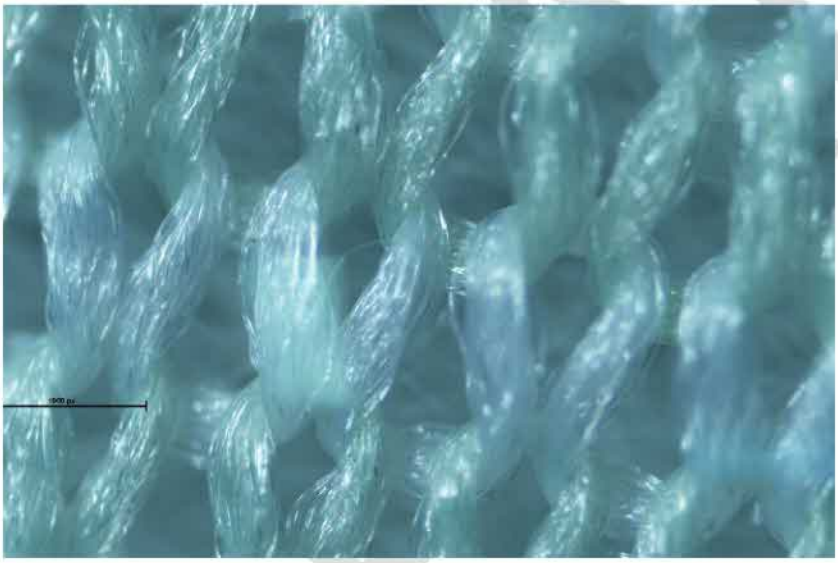


FIGURE 2-B: TICKING FABRIC, INNER SURFACE (MINT), 40X

Figure 3: 22-800-1442-03 Ticking Fibers from Outer Surface, Inner Surface and Fiber Fill (A-C)

FIGURE 3-A: OUTER SURFACE TICKING FIBERS, 400X

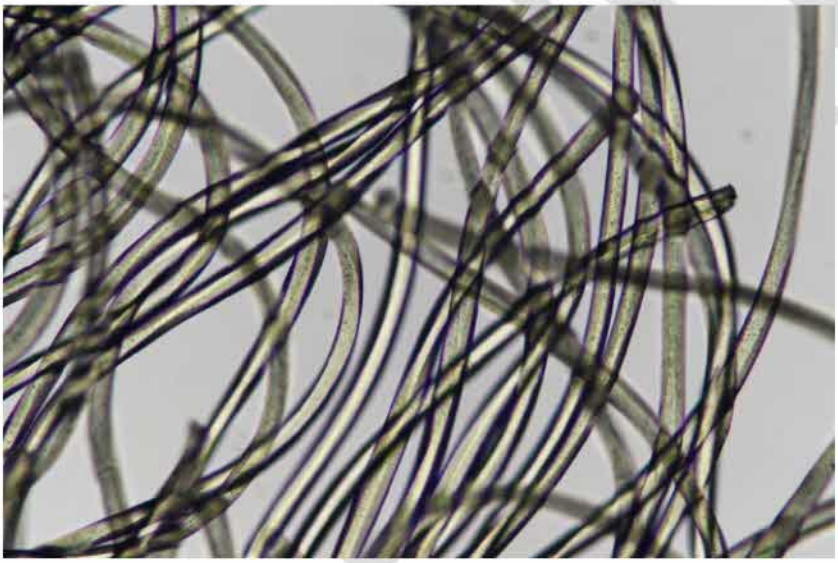


FIGURE 3-B: INNER SURFACE TICKING FIBERS, 400X

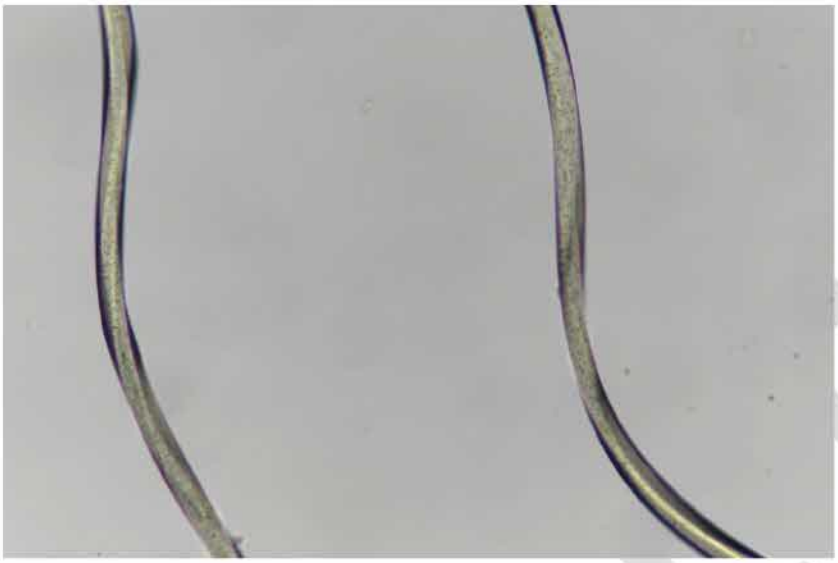


FIGURE 3-C: TICKING FILL FIBERS, 200X

Figure 4: 22-800-1442-03 Outer Ticking Fabric (White) Red Plate (A-B)

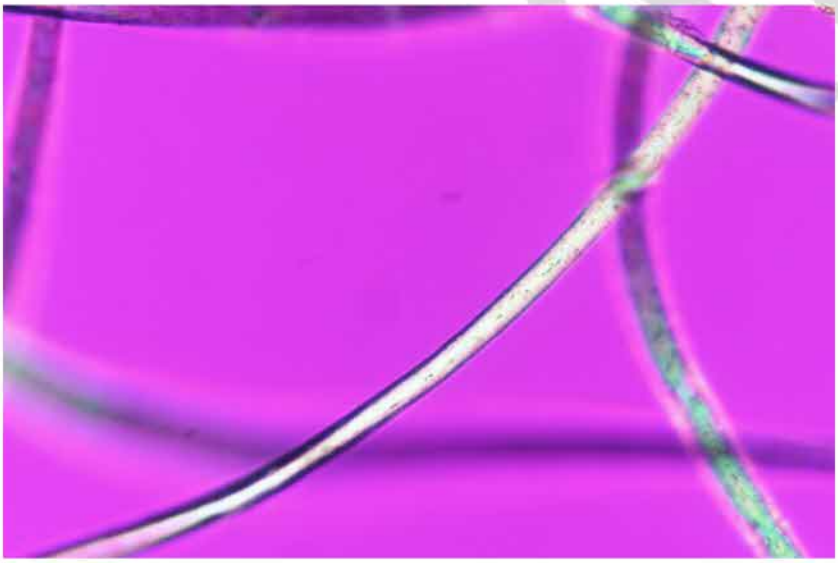


FIGURE 4-A: OUTER TICKING SURFACE FIBERS, LIGHT YELLOW IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

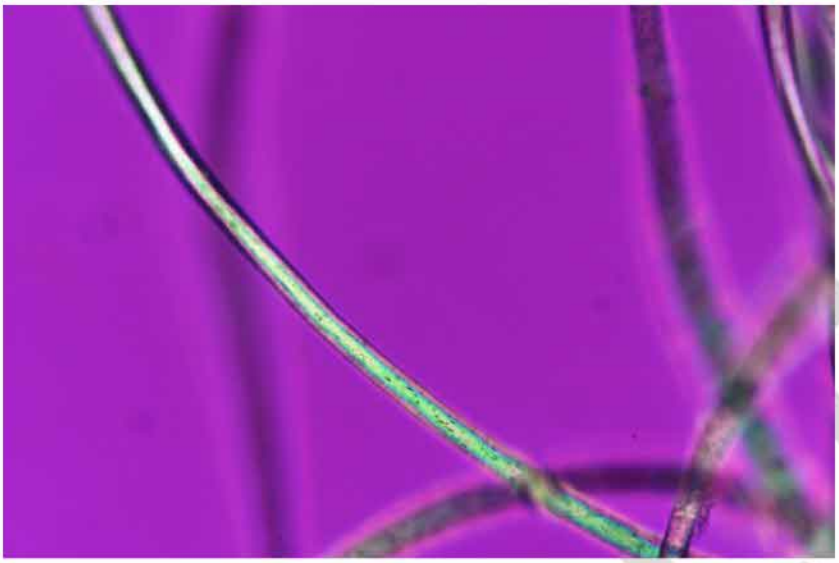


FIGURE 4-B: OUTER TICKING SURFACE FIBERS, LIGHT BLUE IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 5: 22-800-1442-03 Inner Ticking Fabric (Mint) Red Plate (A-B)

FIGURE 5-A: INNER TICKING SURFACE FIBERS, LIGHT YELLOW IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

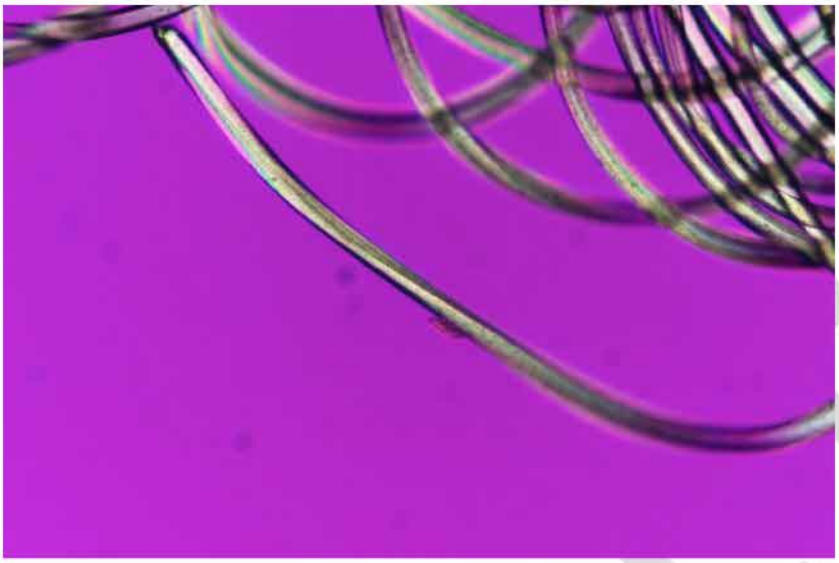


FIGURE 5-B: INNER TICKING SURFACE FIBERS, LIGHT BLUE IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 6: 22-800-1442-03 Ticking Fill Red Plate (A-B)

FIGURE 6-A: TICKING FILL FIBERS, LIGHT YELLOW IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

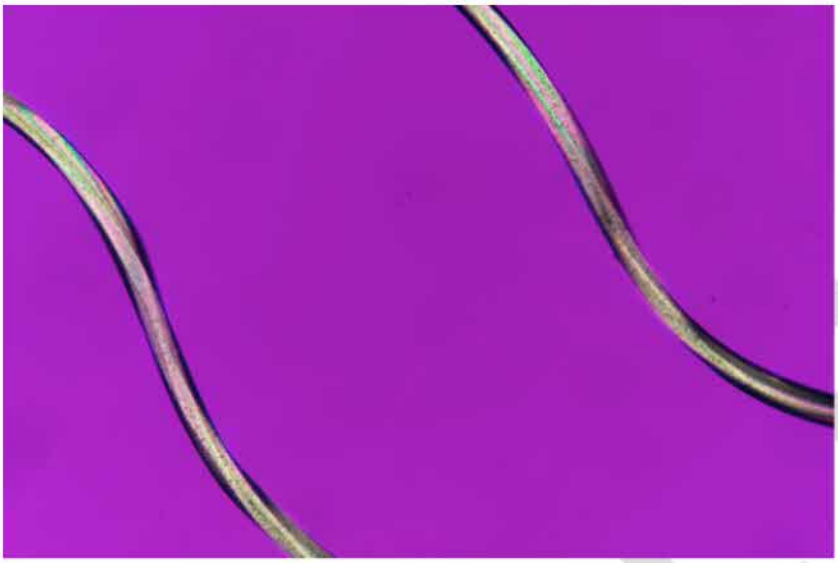


FIGURE 6-B: TICKING FILL FIBERS, LIGHT BLUE IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 7: 22-800-1442-03 Barrier Fabric

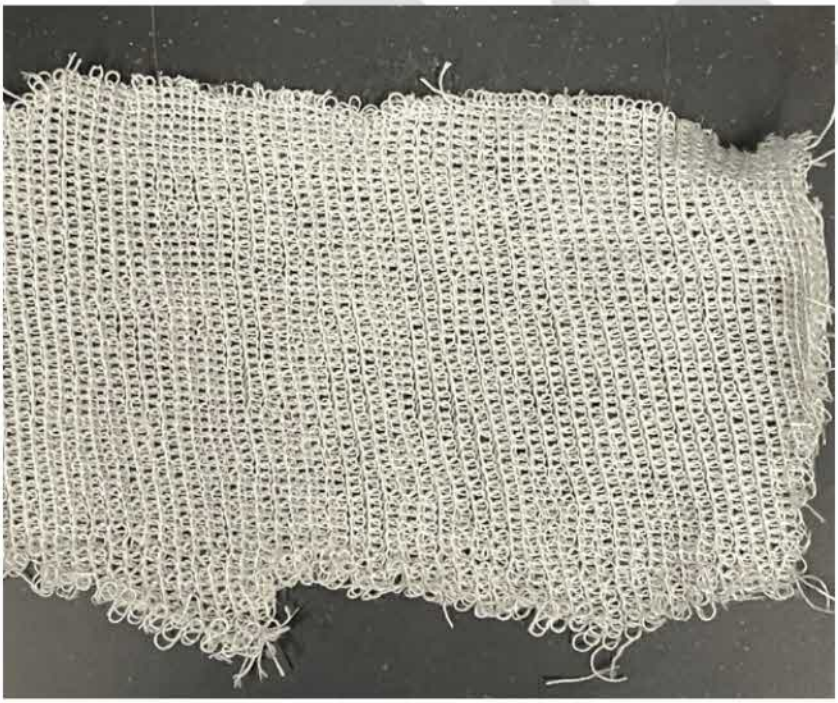


Figure 8: 22-800-1442-03 Barrier Fabric 40x

FIGURE 8-A: BARRIER FABRIC, 40X

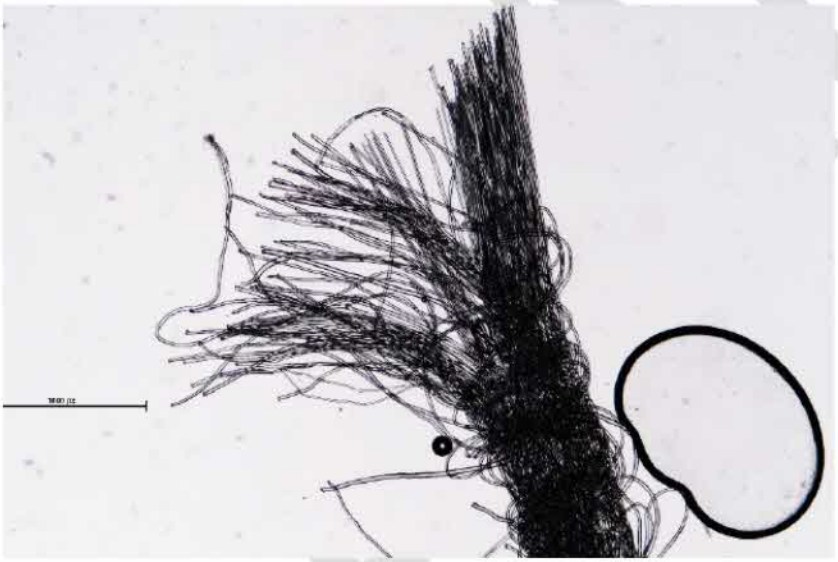


FIGURE 8-B: BARRIER YARN, 400X

Figure 9: 22-800-1442-03 Barrier Fabric Red Plate (A-D)

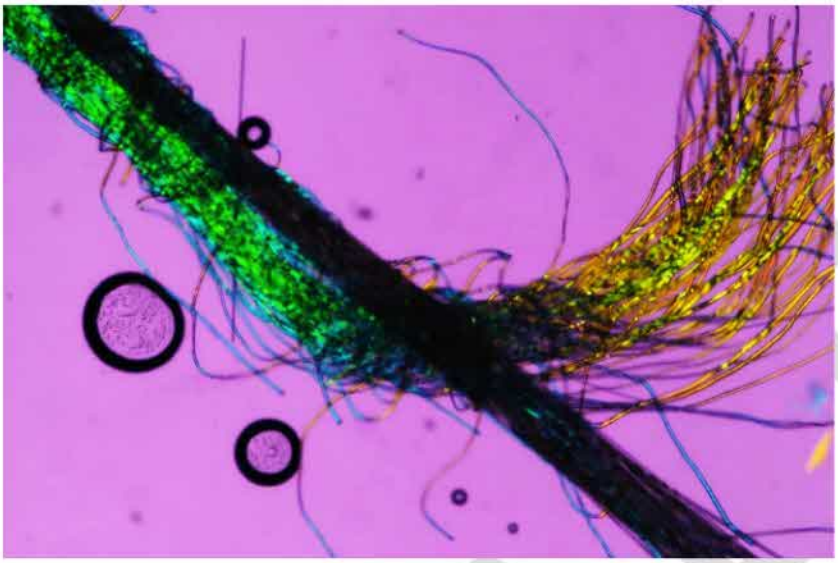


FIGURE 9-A: BARRIER YARN, 40X

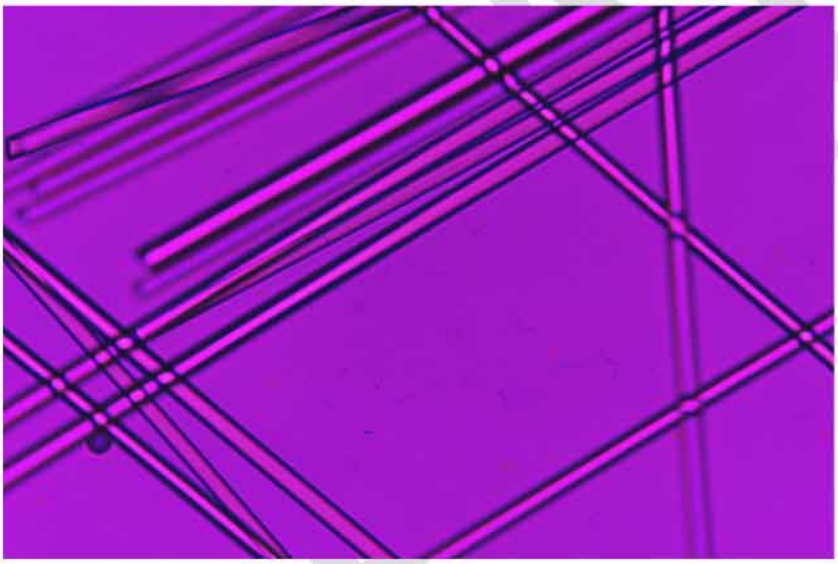


FIGURE 9-B: BARRIER CORE FIBERS, 400X

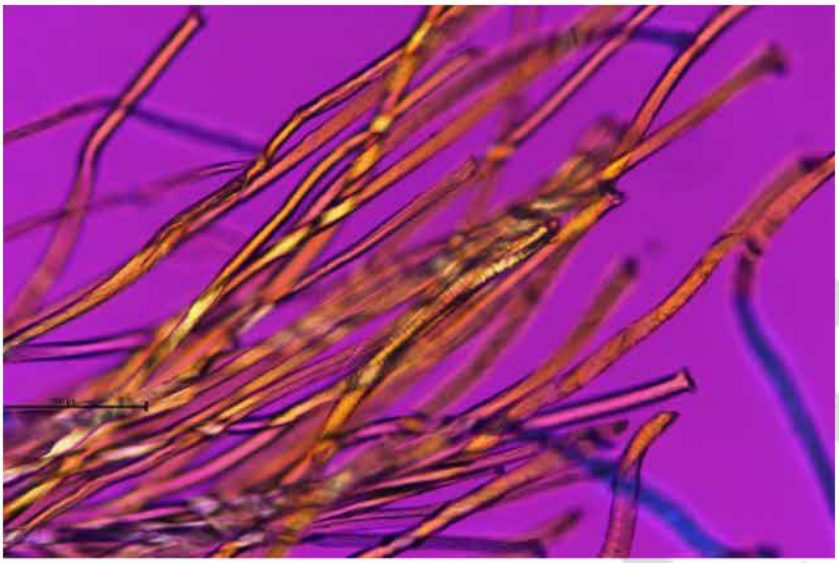


FIGURE 9-C: BARRIER WRAP FIBERS, YELLOW IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

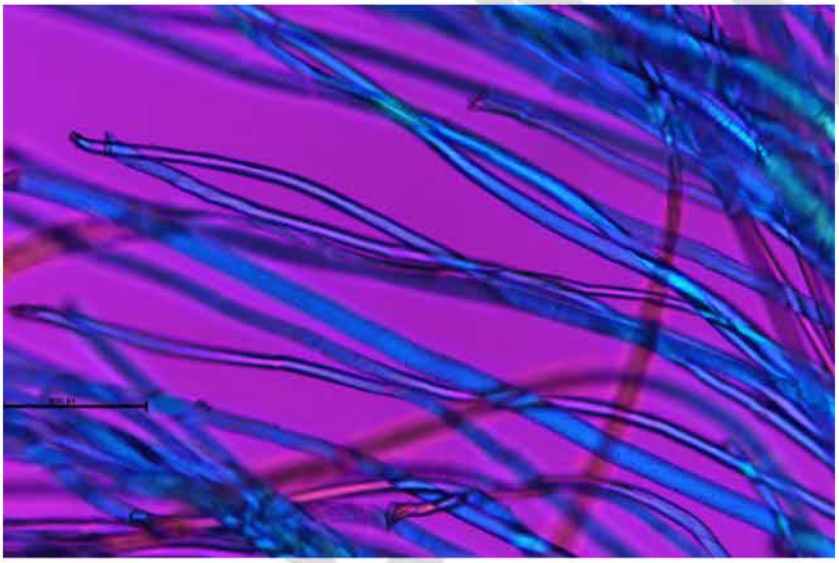


FIGURE 9-D: BARRIER WRAP FIBERS, BLUE IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 10: 22-800-1443-03 Ticking Fabric (A-B)

Figure 10-A:

Figure 10-B:

Figure 11: 22-800-1443-03 Ticking Fabric 40x (A-B)

Figure 11-A: Ticking Outer Surface, 40x

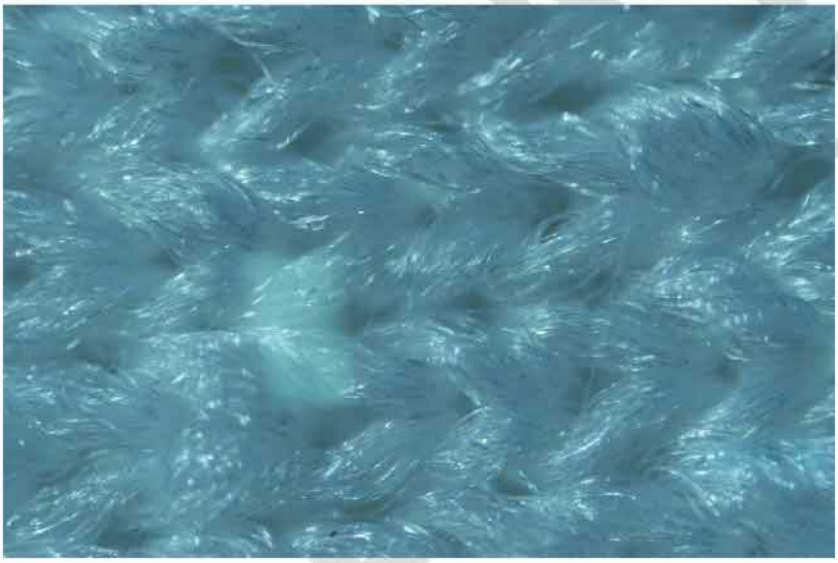
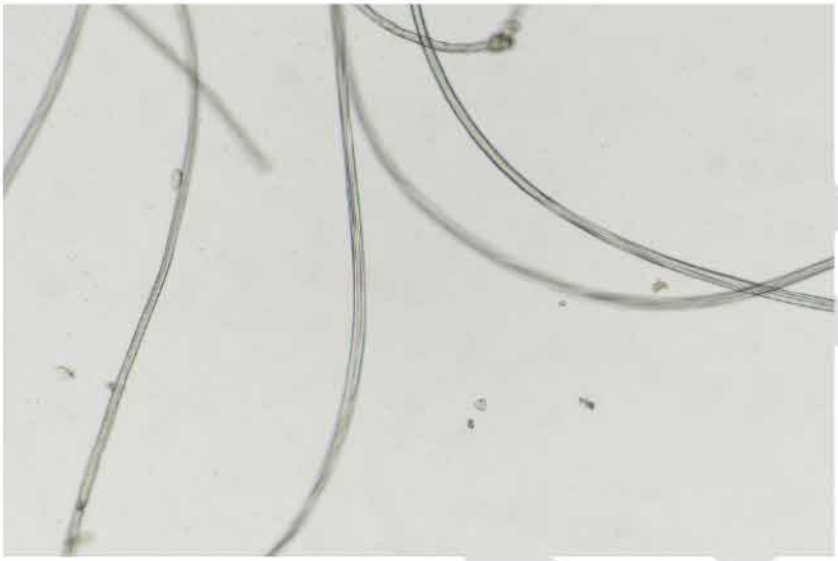
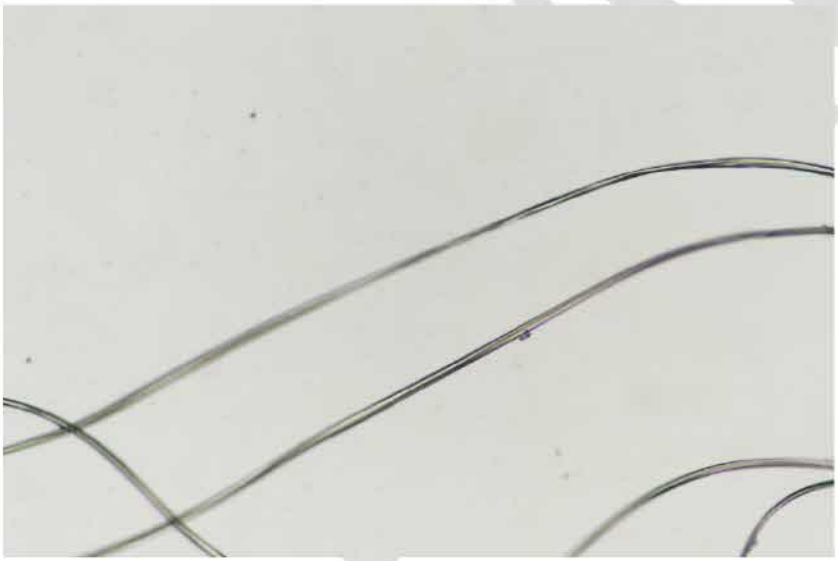


Figure 11-B: Ticking Inner Surface, 40x

Figure 12: 22-800-1443-03 Ticking Fibers from Outer Surface, Inner Surface and Fiber Fill (A-C)



Outer Ticking Surface Fibers 100x



Ticking Inner surface fibers 100x

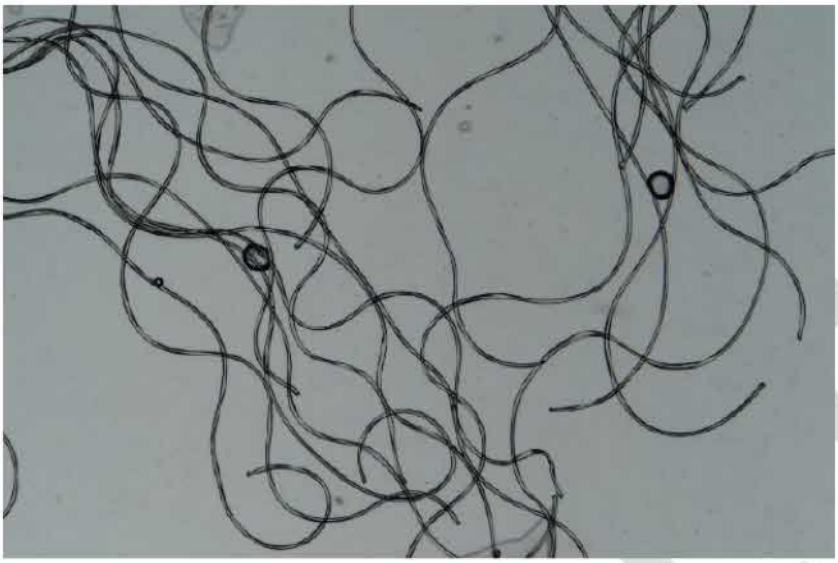


Figure 12-C: Ticking Fill Fiber, 400x

Figure 13: 22-800-1443-03 Outer Ticking Fabric Red Plate (A-B)

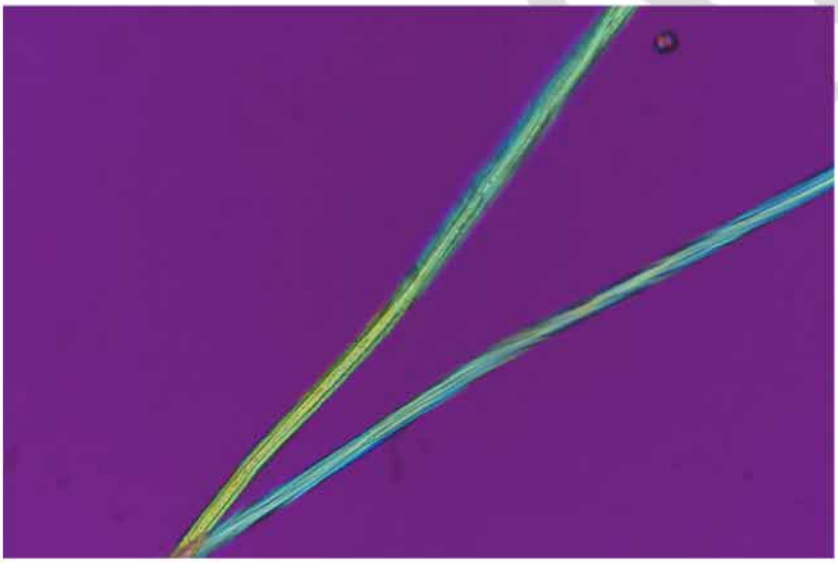


FIGURE 13-A: OUTER TICKING FIBERS, BLUE IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

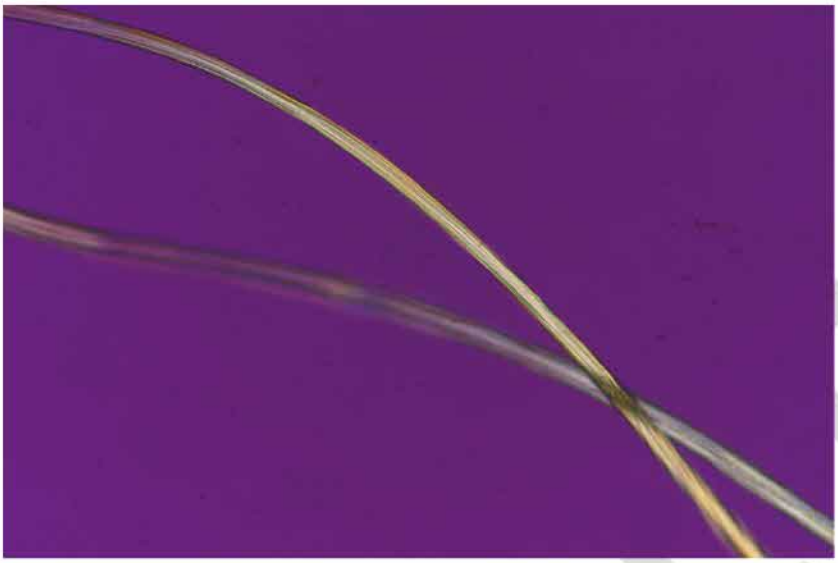


FIGURE 13-B: OUTER TICKING FIBERS, YELLOW IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 14: 22-800-1443-03 Inner Ticking Fabric Red Plate (A-B)

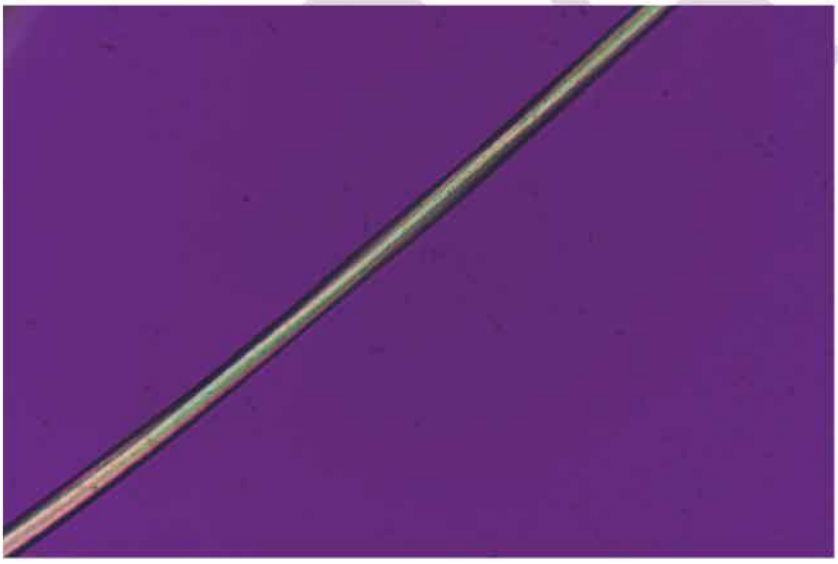


FIGURE 14-A: INNER TICKING FIBERS, BLUE IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

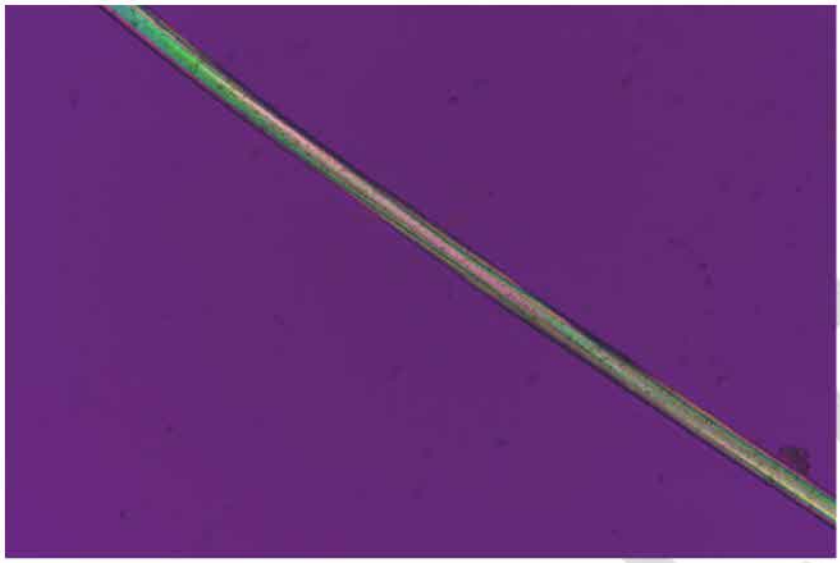


FIGURE 14-B: INNER TICKING FIBERS, YELLOW IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 15: 22-800-1443-03 Ticking Fiber Fill Red Plate

FIGURE 15-A: TICKING FILL FIBERS, YELLOW IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 200X

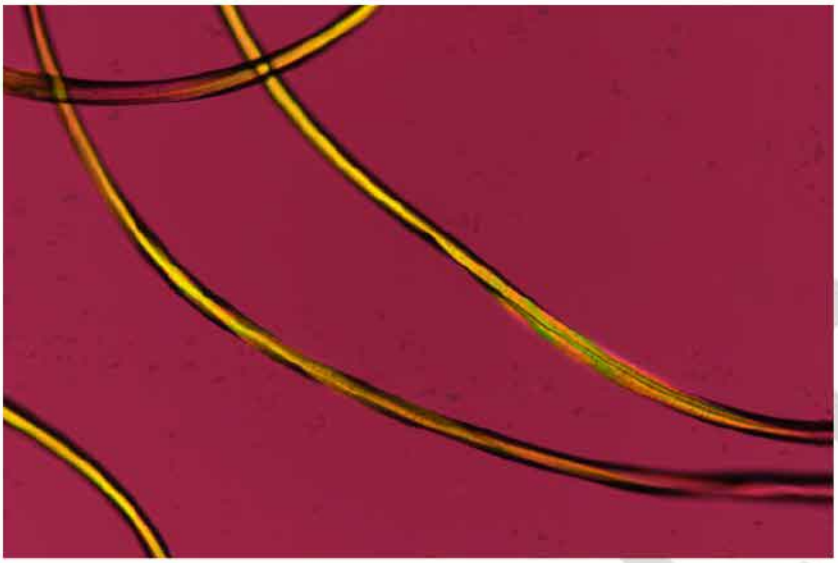


FIGURE 15-B: TICKING FILL FIBERS, YELLOW IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 200X

Figure 16: 22-800-1443-03 Barrier Fabric

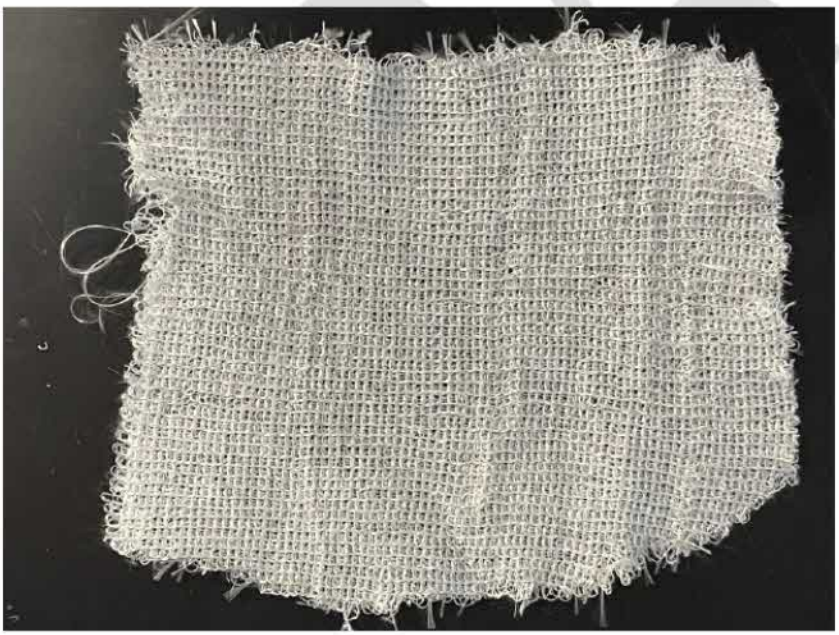


Figure 17: 22-800-1443-03 Barrier Fabric 40x

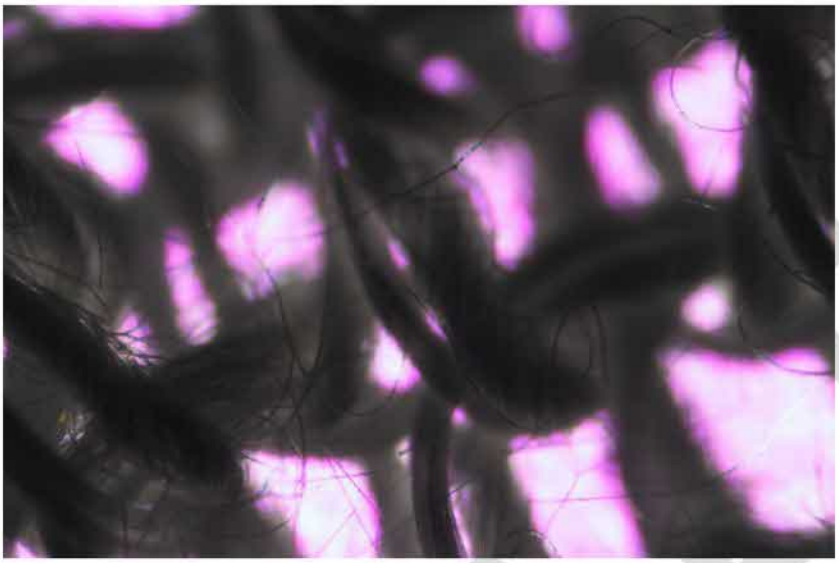


Figure 18: 22-800-1443-03 Barrier Fabric Scaffolding Yarn Red Plate

FIGURE 18-A: BARRIER SCAFFOLDING FIBERS, BLUE IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

FIGURE 18-B: TICKING FILL FIBERS, YELLOW IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Figure 19: 22-800-1443-03 Barrier Fiberglass Fibers Red Plate

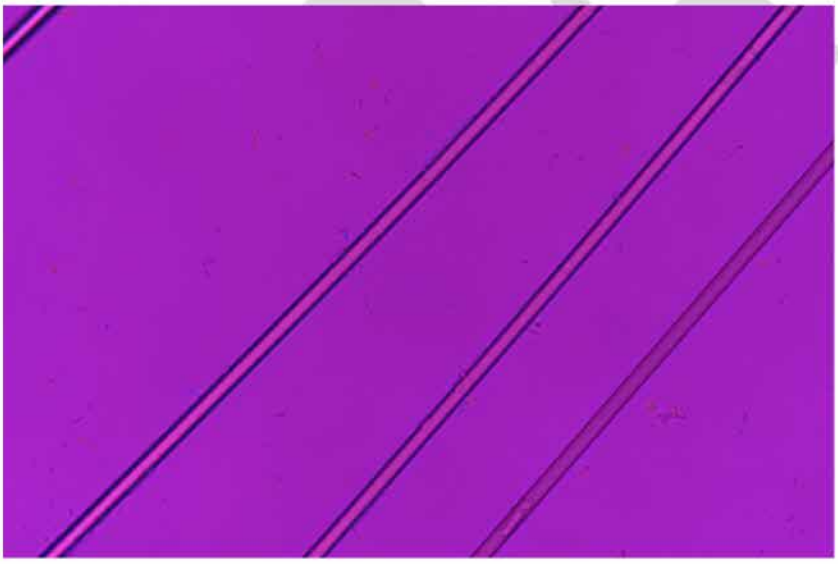


FIGURE 19-A: BARRIER FILL FIBERS, EXTINCT IN THE NORTH-EAST TO SOUTH-WEST DIRECTION, 400X

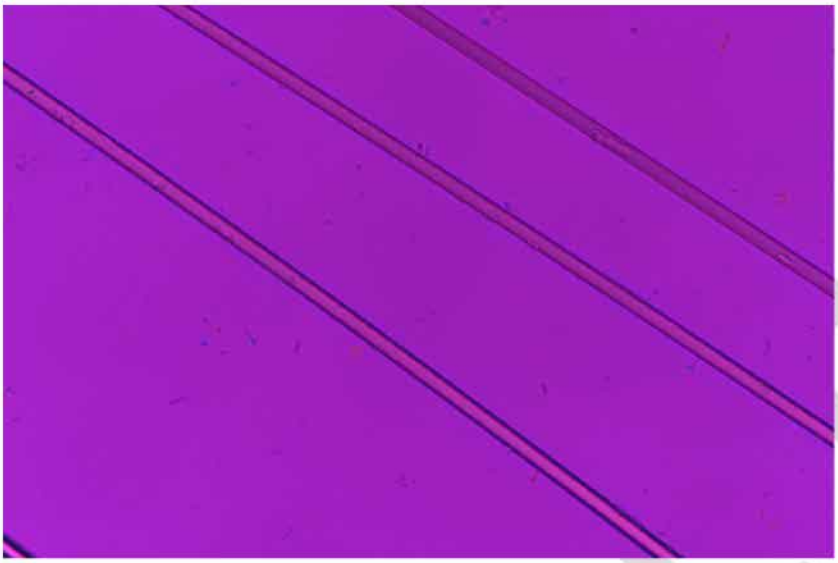


FIGURE 19-B: BARRIER FILL FIBERS, EXTINCT IN THE NORTH-WEST TO SOUTH-EAST DIRECTION, 400X

Conclusions

22-800-1442-03 ticking fabric was determined to be 100% polyester for the outer surface, inner surface and fill fibers. Under the red plate all parts of the ticking fabric were light yellow in the North-East to South-West direction and light blue in the North-West to South-East direction. This indicates that they are polyester fiber.

22-800-1442-03 barrier fabric was determined to be fiberglass core fibers wrapped with acrylic or polypropylene fibers. The core fibers were extinct in both the North-East to South-West direction and the North-West to South-East direction confirming fiberglass fibers. The wrapped fibers were determined that the fibers are either acrylic or polypropylene. The fiberglass had an average fiber length of 11.3 mm and average diameter of . The yarns were spun using an air-wrap spinner with a Z twist. Looking at the fabrics from this sample in original state there was no evidence of fiberglass fibers breaking or moving through the ticking fabric.

22-800-1443-03 ticking fabric was determined to be 100% polyester for the outer surface and inner surface fabrics. Under the red plate all parts of the ticking fabric were light yellow in the North-East to South-West direction and light blue in the North-West to South-East direction. This indicates that they are polyester fiber. The ticking fill fiber was determined to be 100% nylon by the yellow color of fibers under red plate in both the North-East to South-West direction and the North-West to South-East direction.

22-800-1443-03 barrier fabric was determined to be fiberglass fibers with rayon scaffolding or support yarn for the fabric. The scaffolding fibers were blue in the North-East to South-West

direction and yellow in the North-West to South-East direction, indicating either acrylic or polypropylene fibers. The fill set of fibers were extinct in both the North-East to South-West direction and the North-West to South-East direction confirming fiberglass fibers. The fibers were too brittle to separate from the scaffolding yarn and get fiber length measurements. The average fiber diameter was around 2 microns.

Table 1: Microscopic Analysis of Mattress Fabrics in Original State

Fabric	Fiber Content	Ave. Fiber length	Ave. Fiber Diameter	Evidence of Fiberglass fibers
1442 Outer Ticking	100% Polyester	-	-	No
1442 Inner Ticking	100% Polyester	-	-	No
1442 Ticking Fill	100% Polyester	-	-	No
1442 Barrier	Fiberglass Core Fibers	11.3 mm	~3.5 micron	Yes
	Acrylic or Polypropylene Wrap Fibers	-	-	
1443 Outer Ticking	100% Polyester	-	-	No
1443 Inner Ticking	100% Polyester	-	-	No
1443 Ticking Fill	100% Nylon	-	-	No
1443 Barrier	Fiberglass	Unable to Measure	~2 micron	Yes
	Rayon Scaffolding knit structure	-	-	

*Average fiber length and diameter taken from 20 individual fiber measurements

Project 1

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Electron Image 1

Si Ka1

O Ka1

Al Ka1

Ca Ka1

Comment: 22-800-1443-03 barrier

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Project 1

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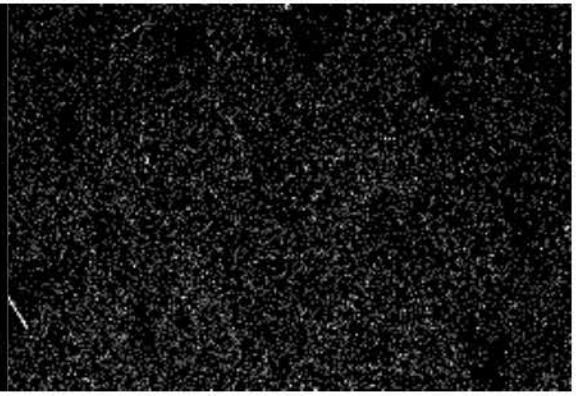
Electron Image 1

C Ka1_2

O Ka1

Si Ka1



Ca Ka1

Comment: 22-800-1443 ticking side A

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Project 1

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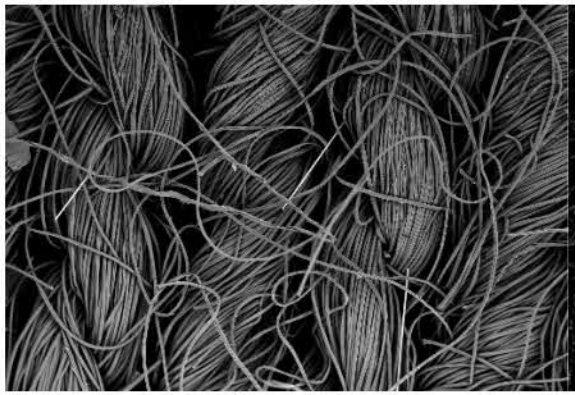
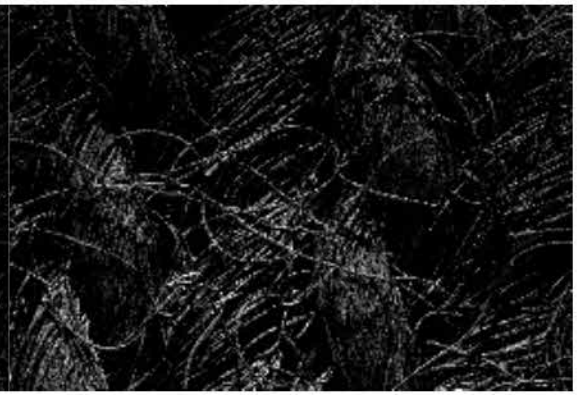


Electron Image 1

C Ka1_2



O Ka1

Ca Ka1

Si Ka1

Comment: 22-800-1443-03 ticking side B

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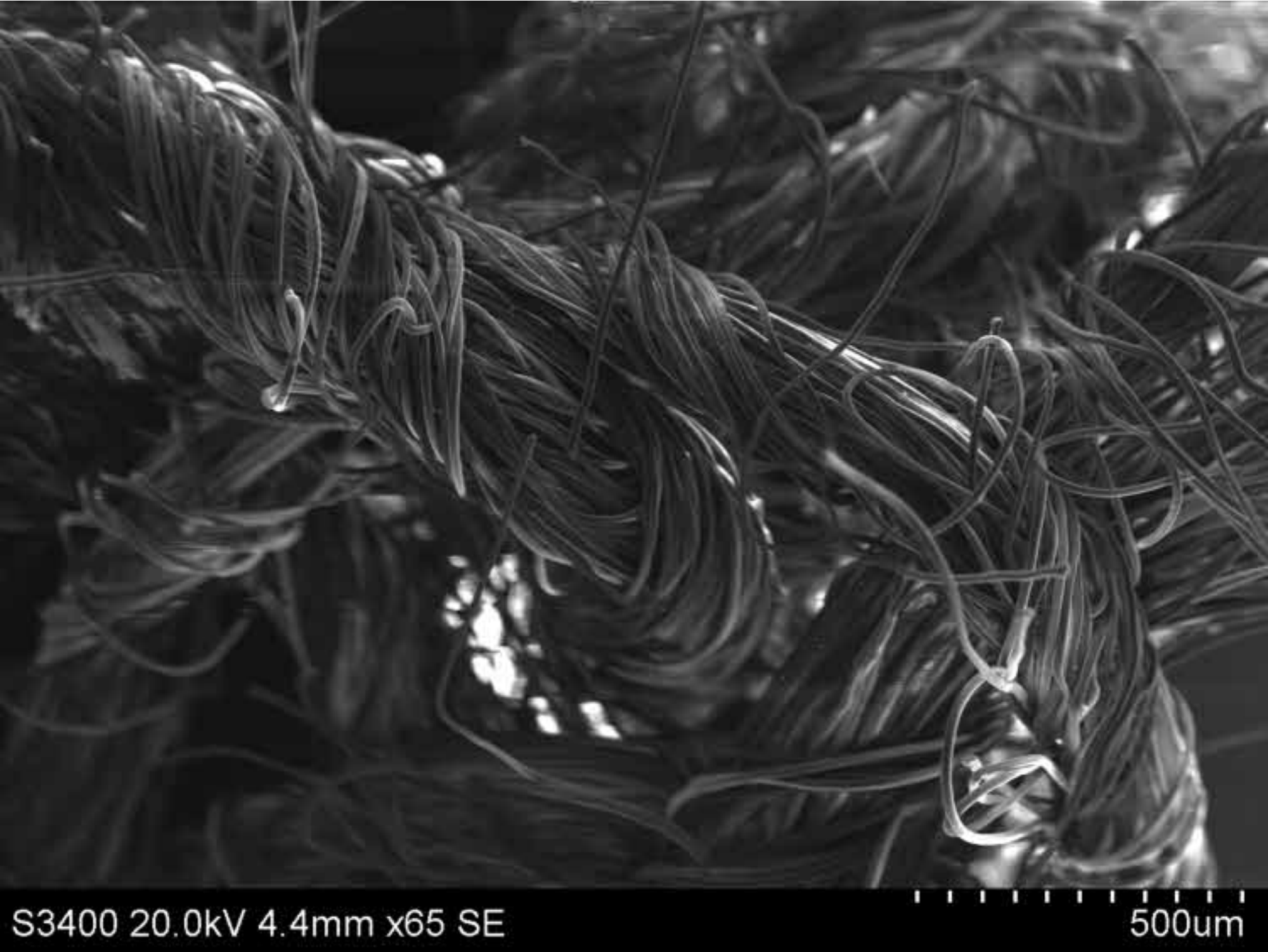
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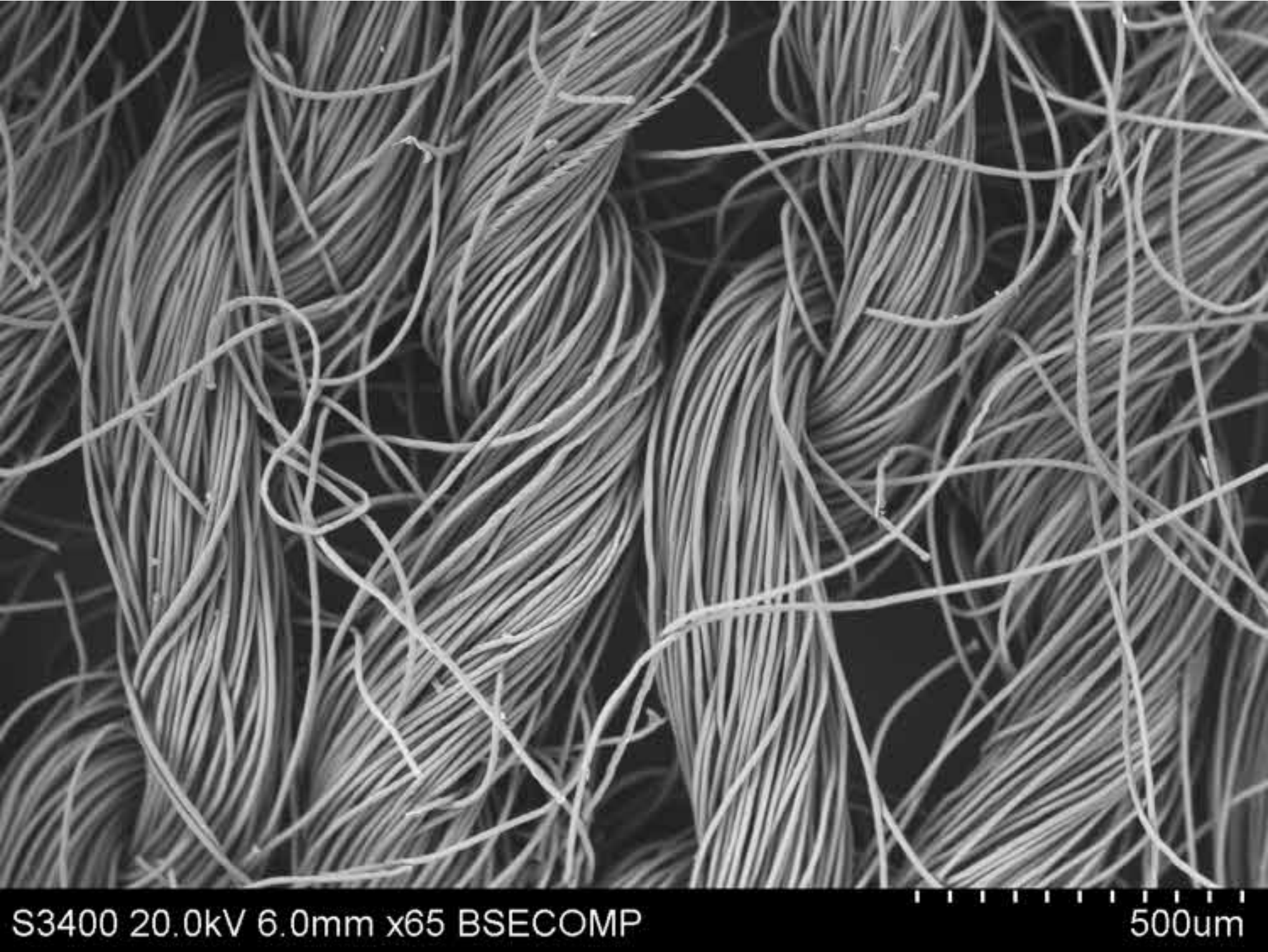
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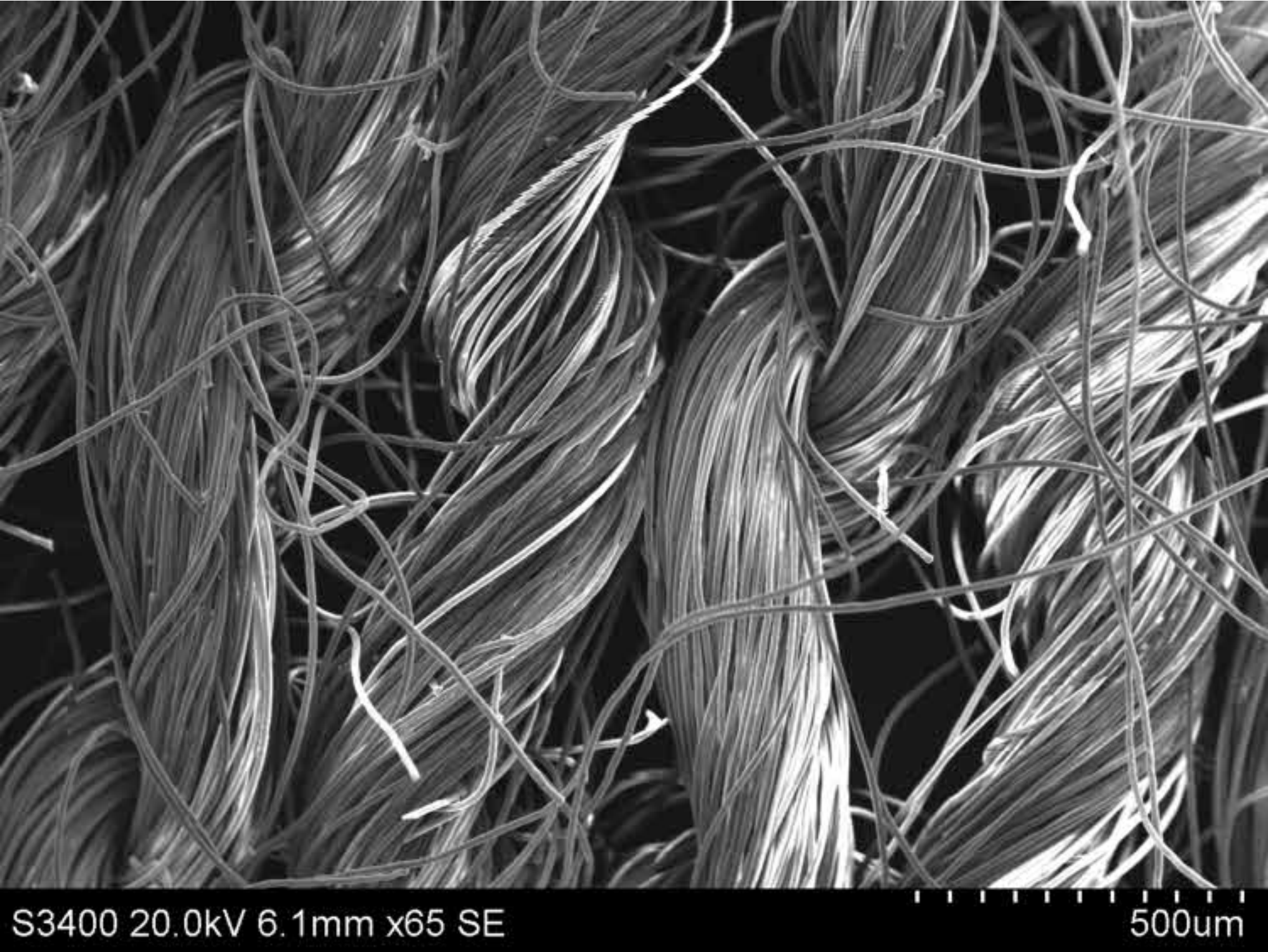
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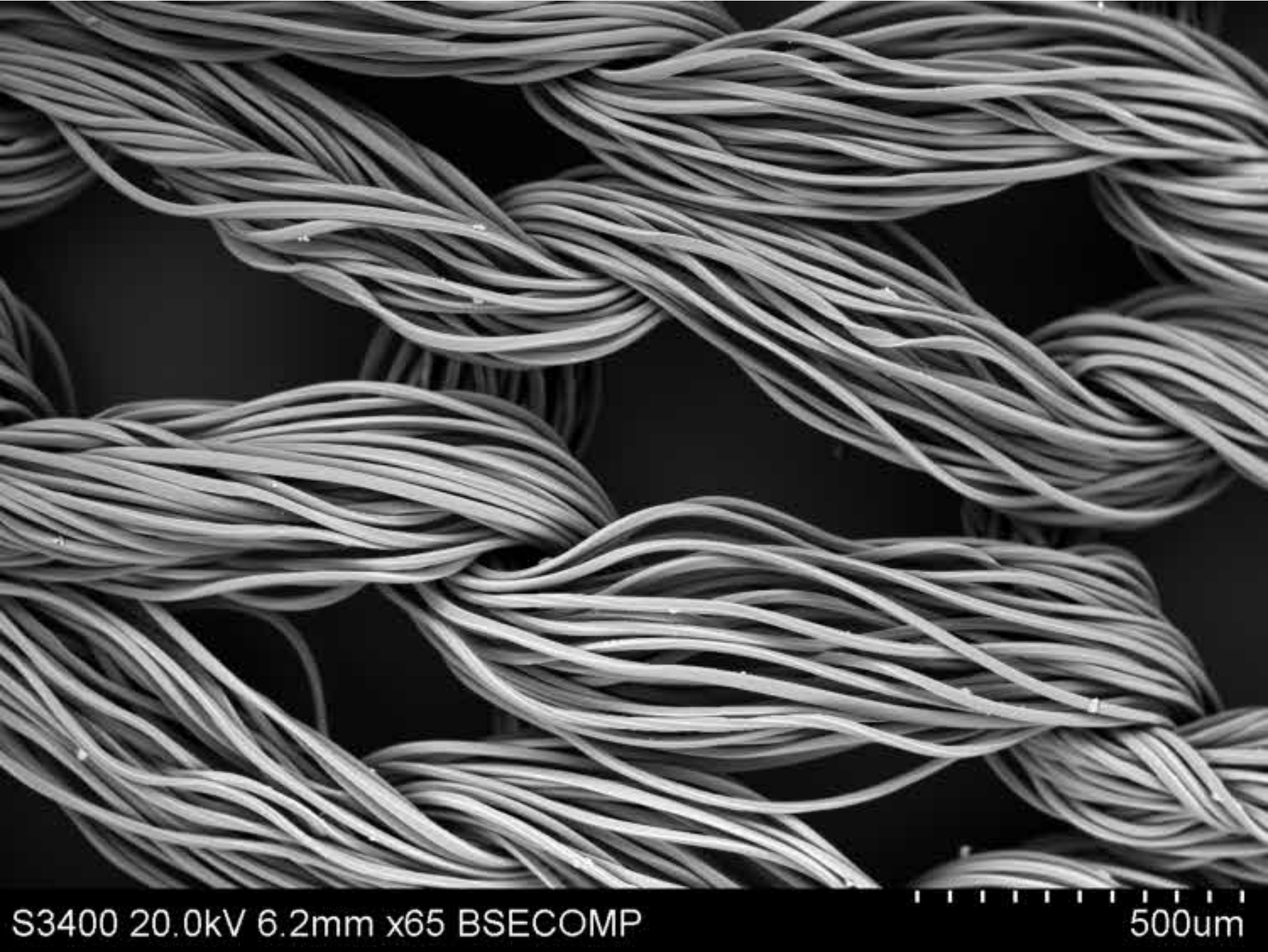
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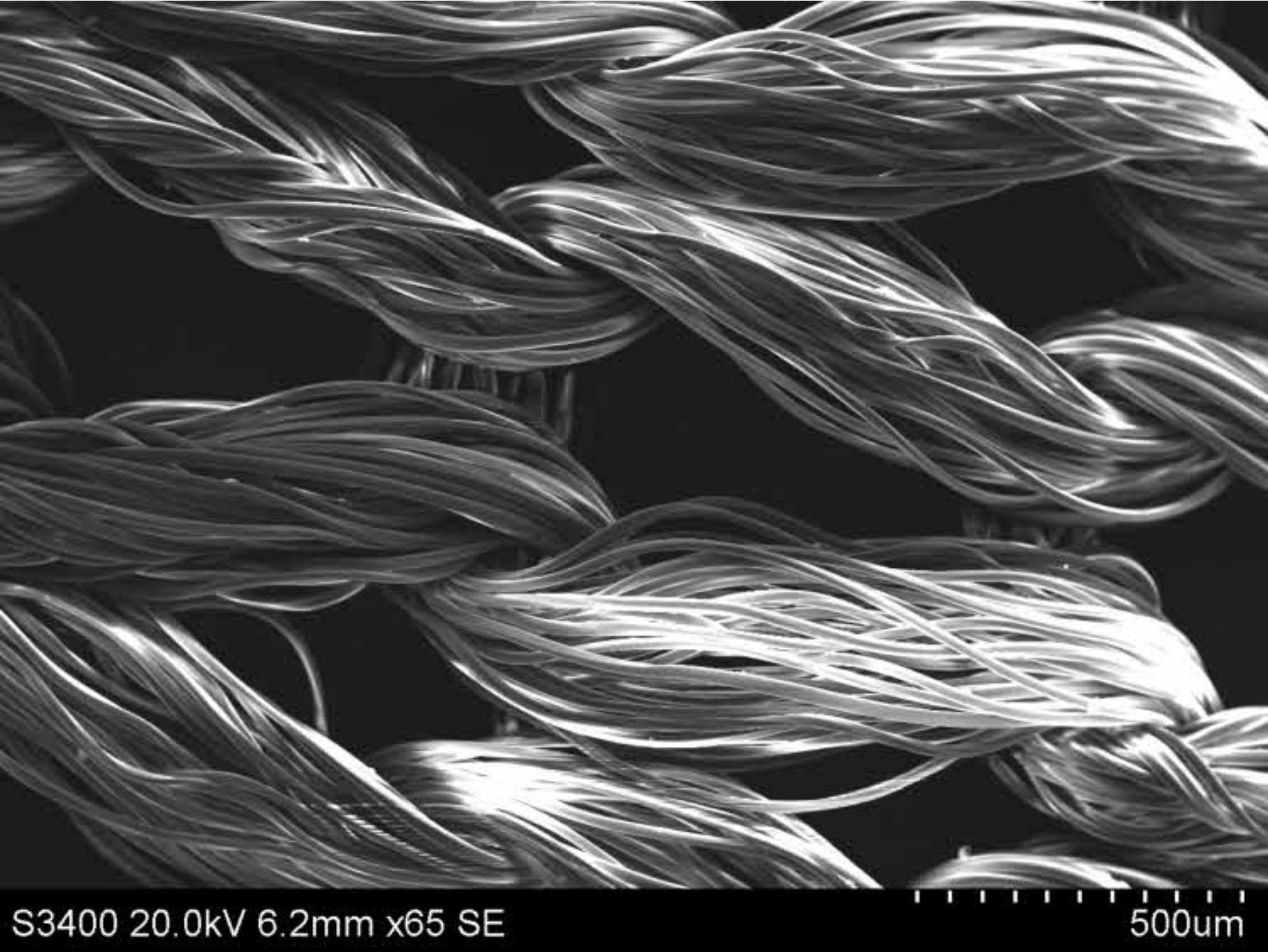
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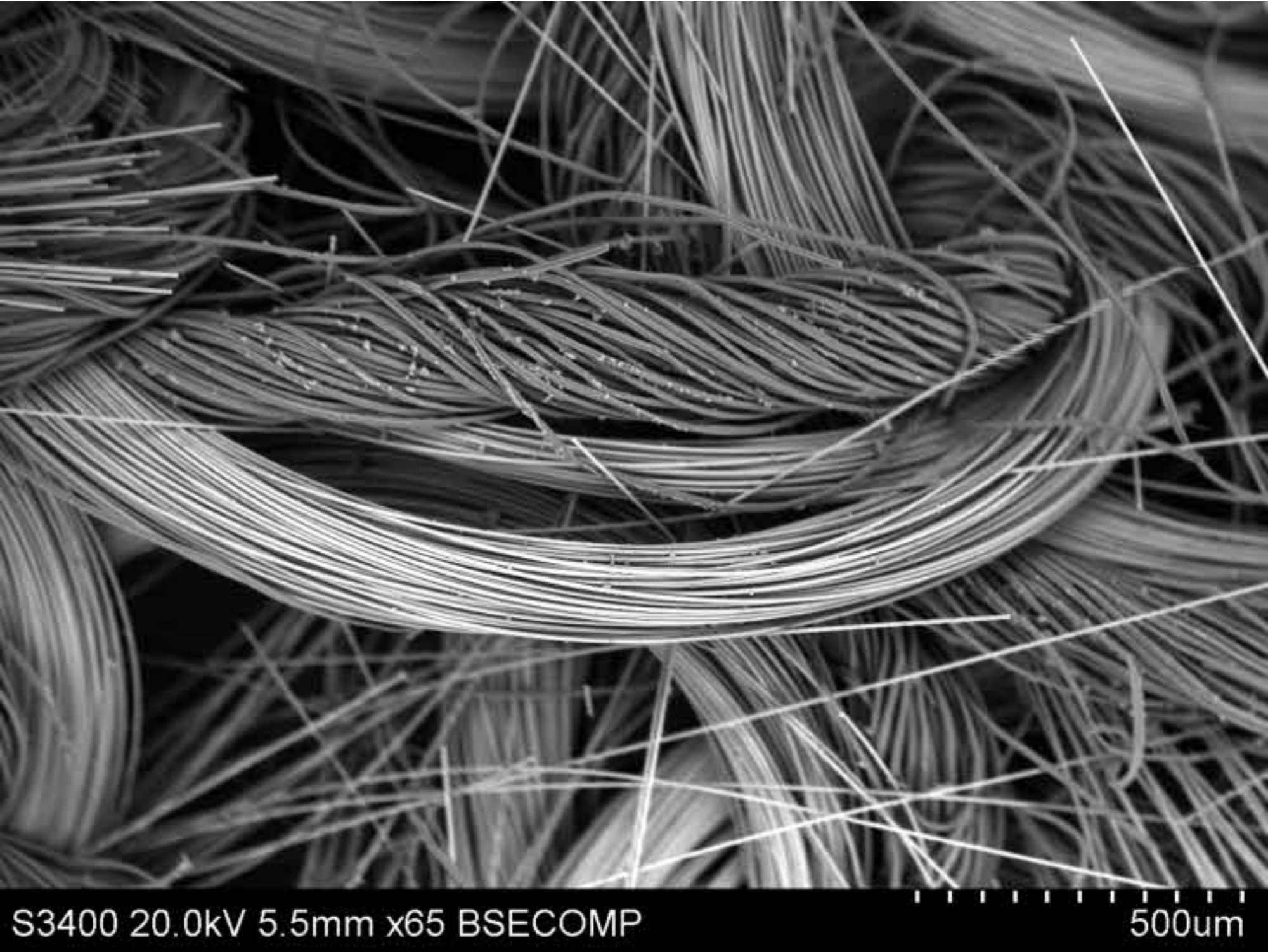
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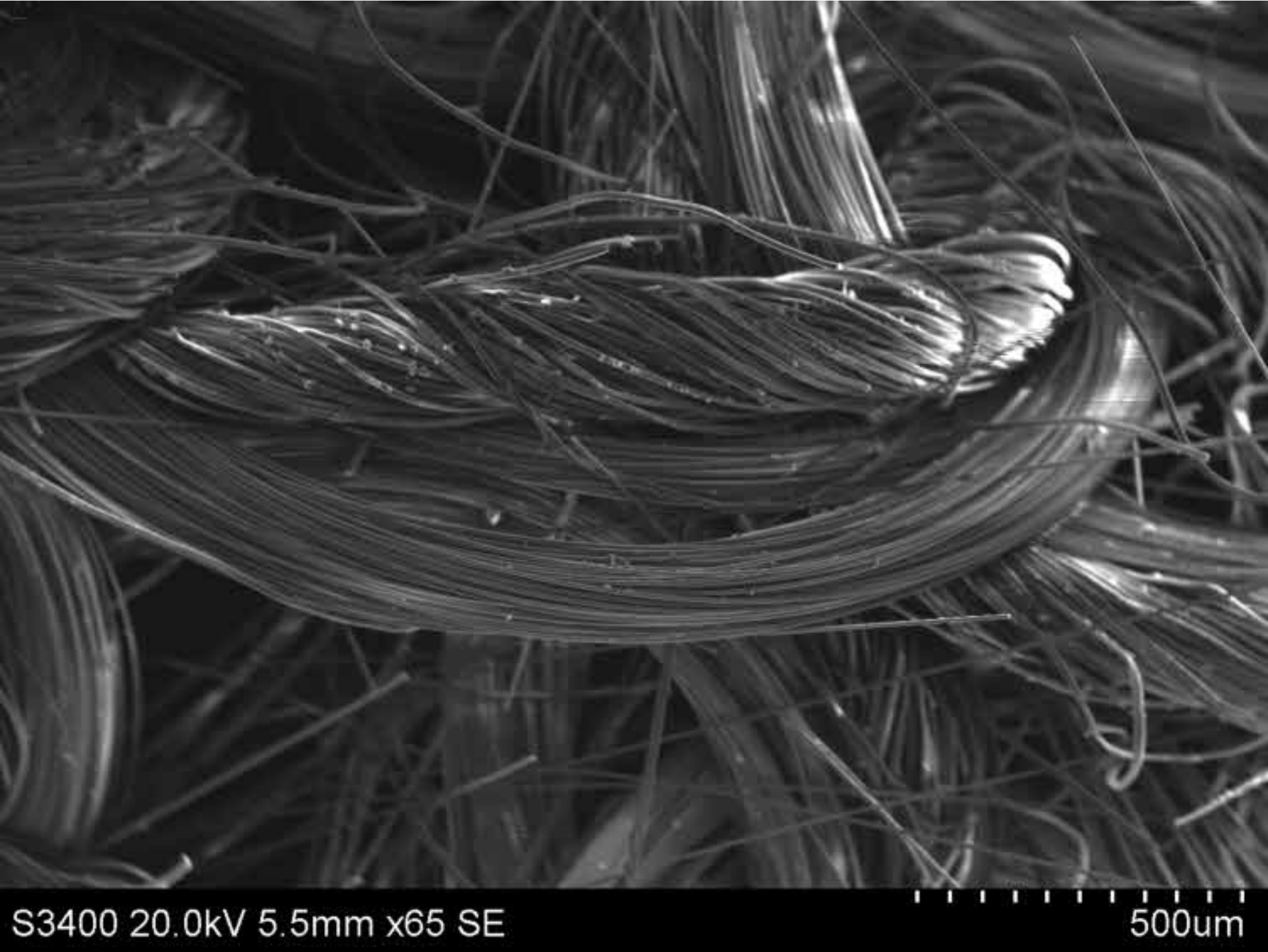
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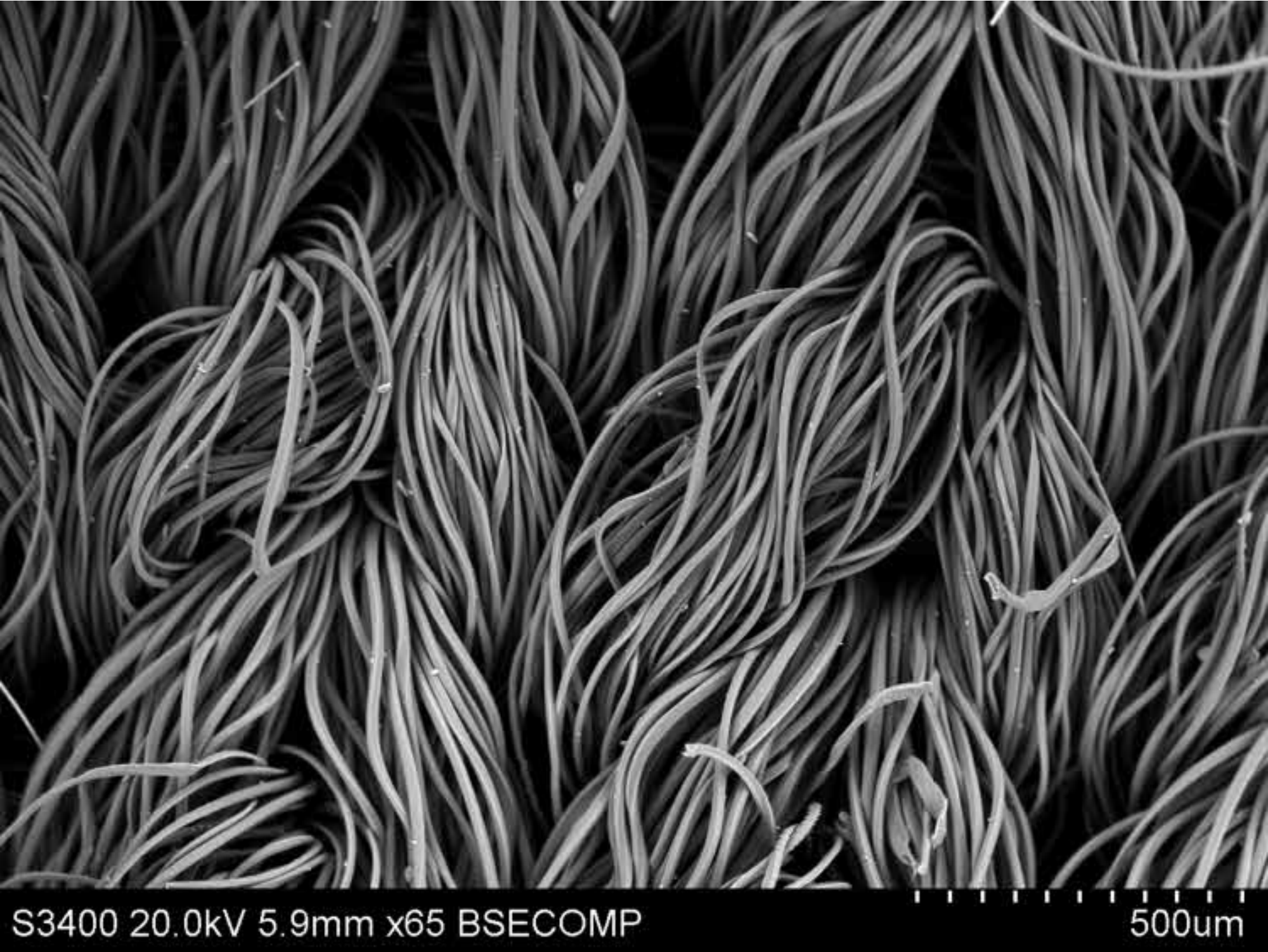
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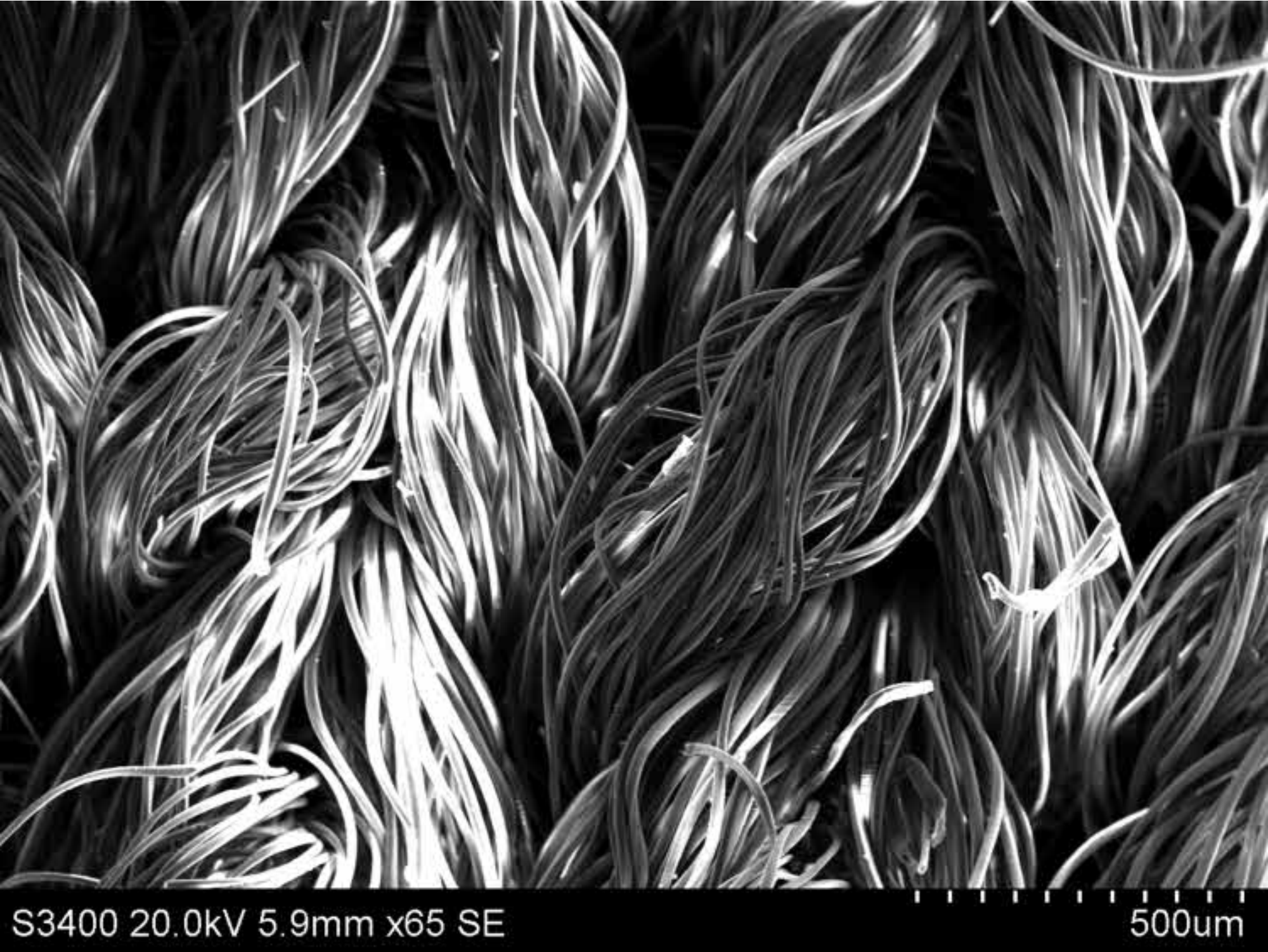
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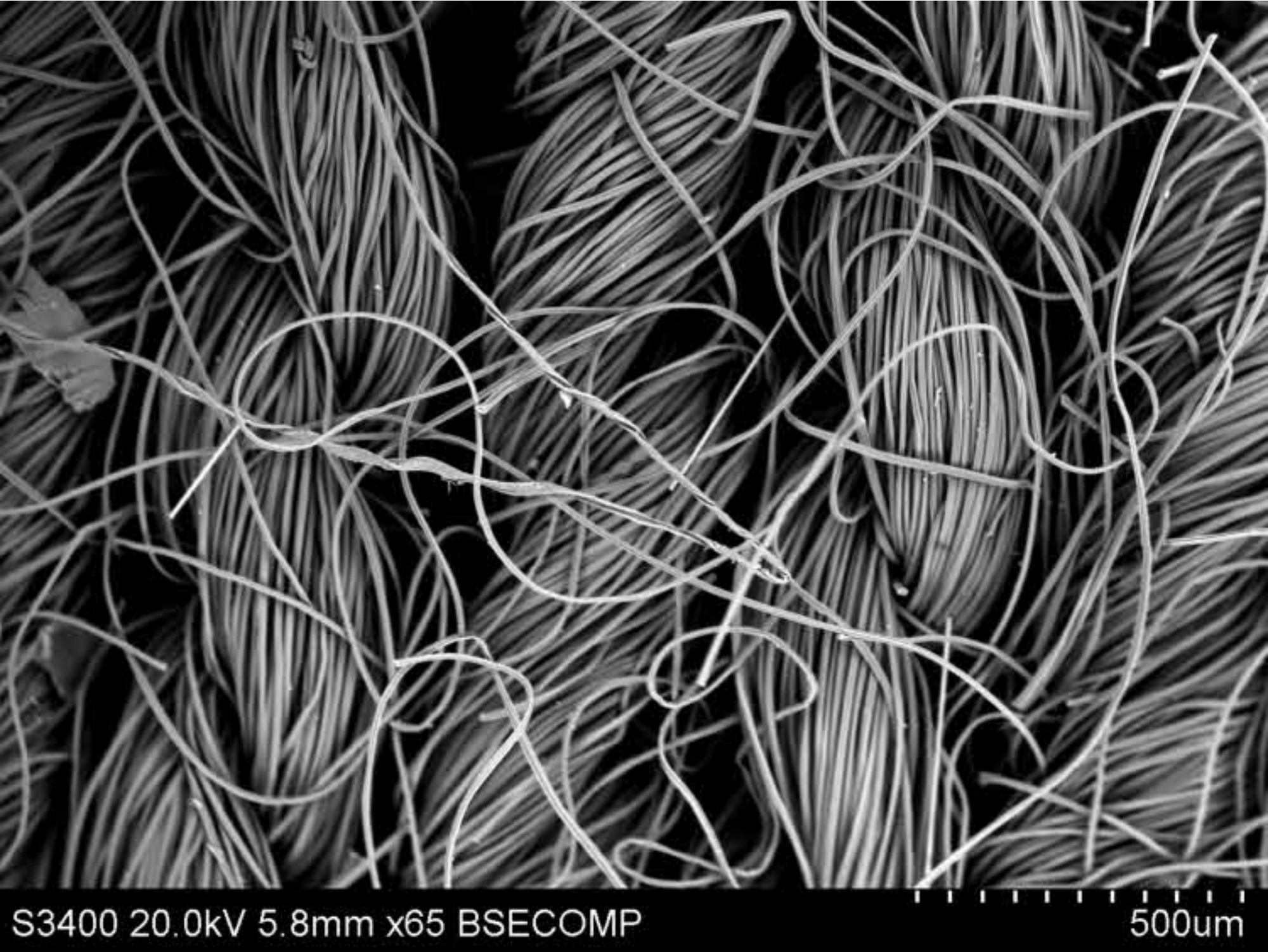
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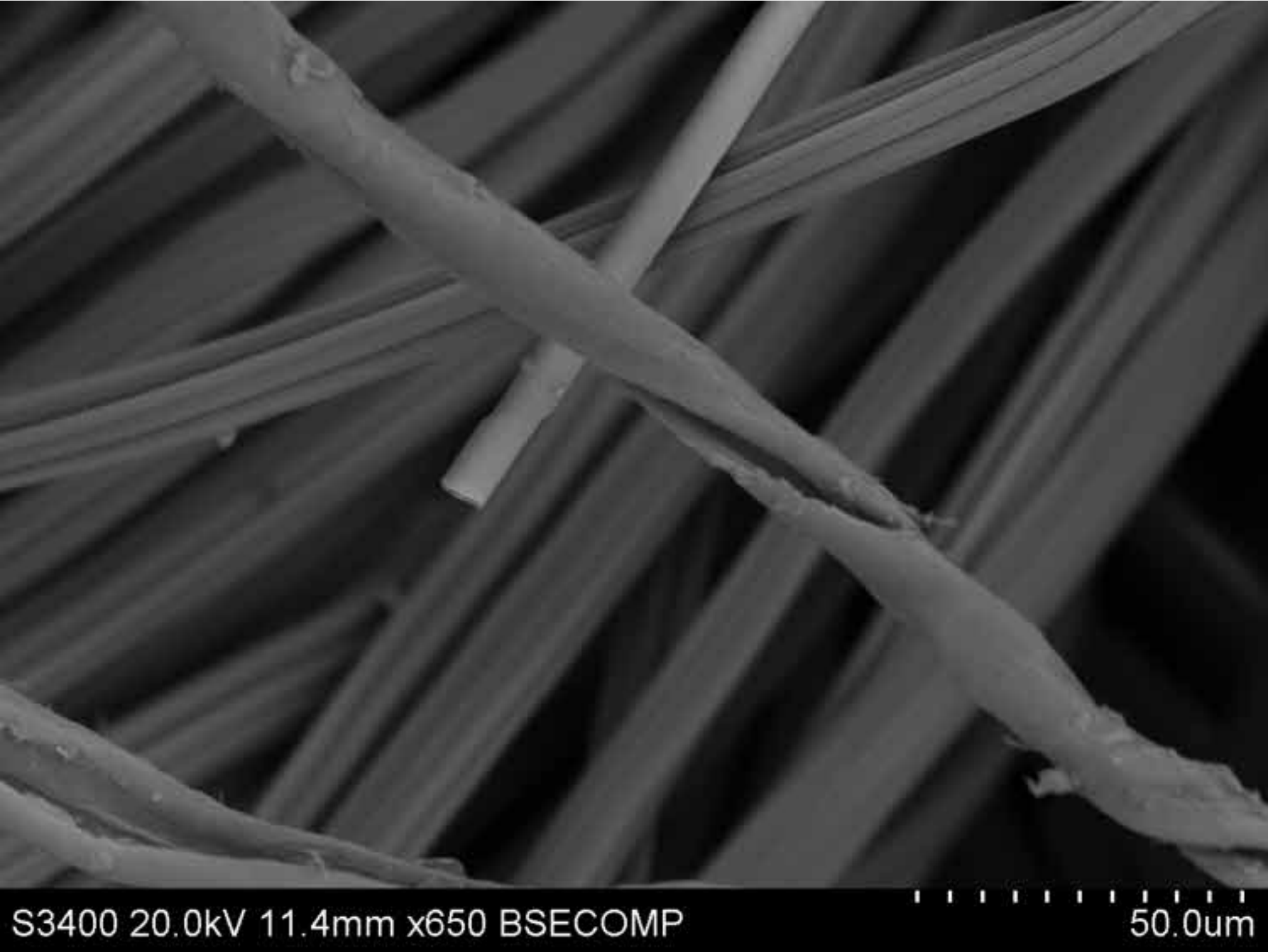
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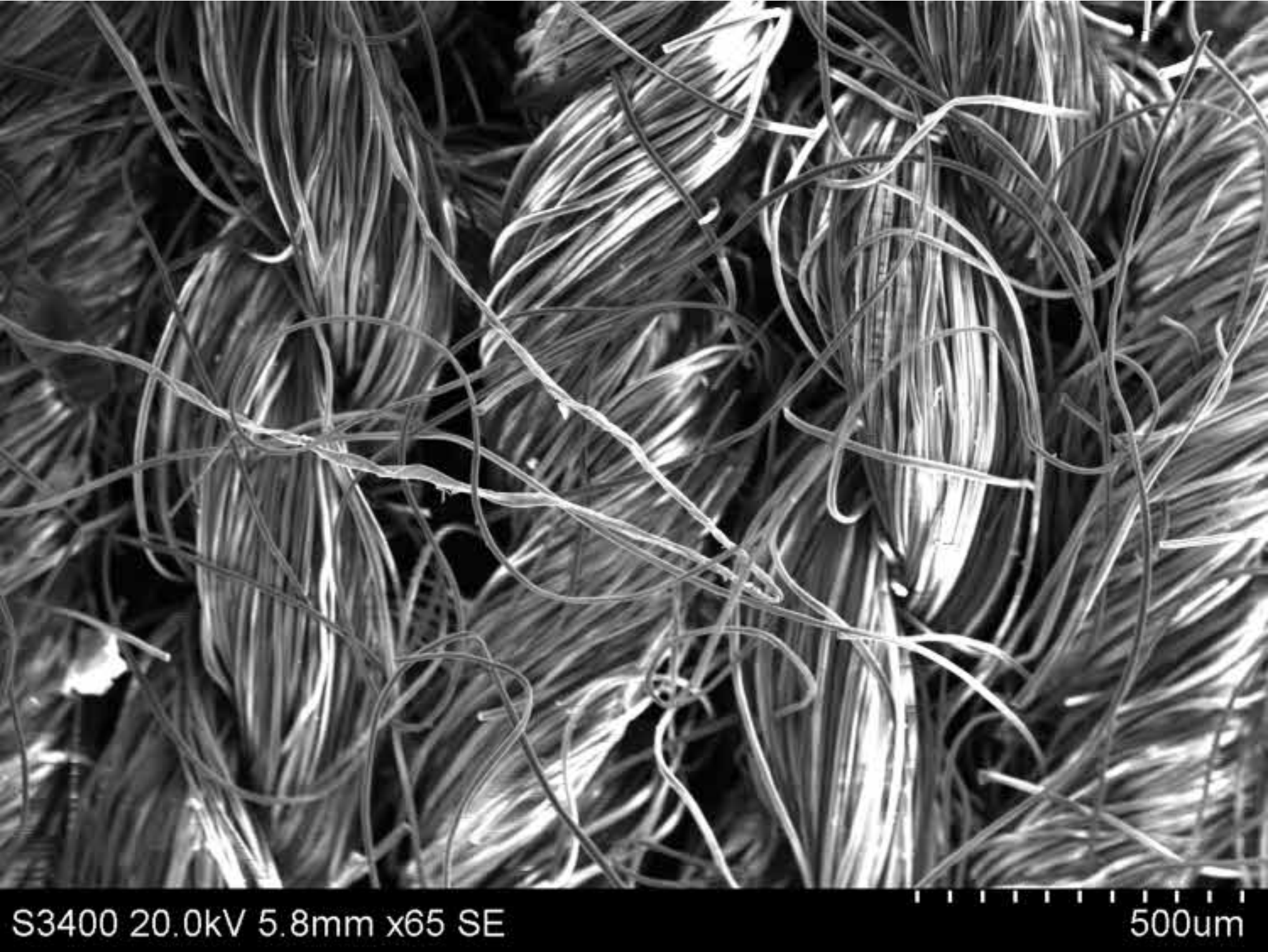
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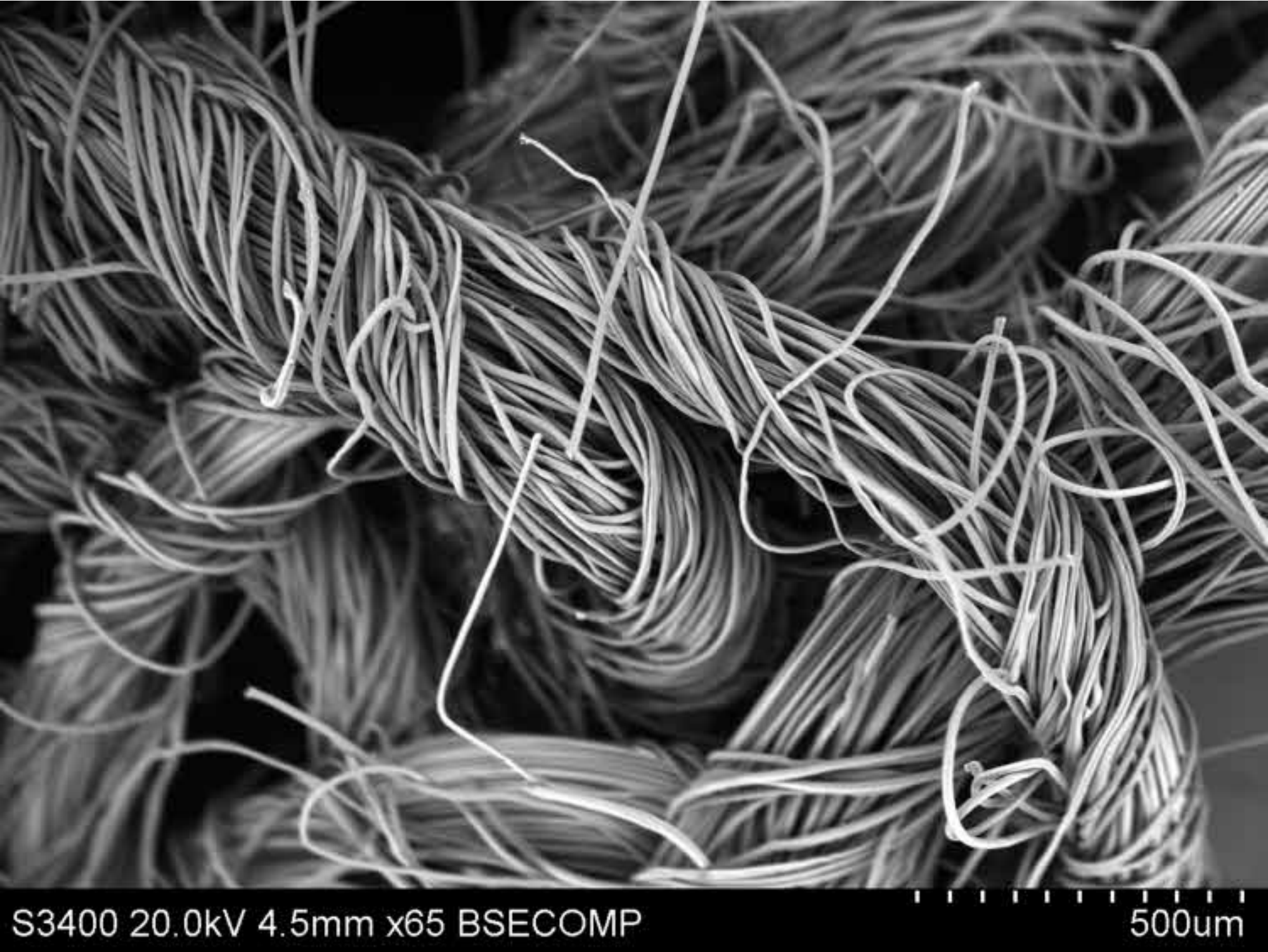
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