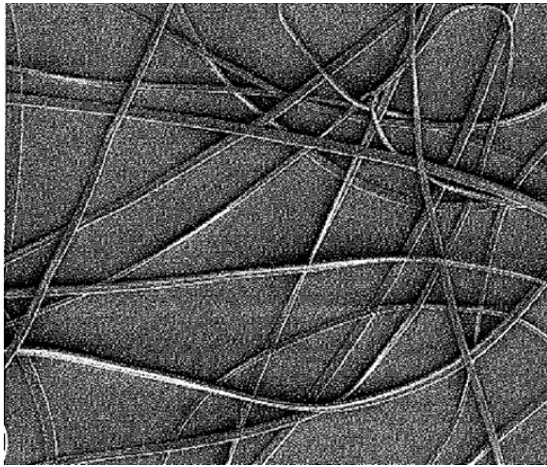


Novel Carbon Fiber Precursor with Low Cost, High Tensile Strength

ID# 2019-4944



SEM Micrograph of Novel Fibers

Technology Summary

The disclosed invention is a new class of carbon fiber precursor with the best properties of PAN and mesophase-pitch all-in-one. This precursor has the high molecular weight, high melt viscosity, and high tensile strength of PAN but the low cost, convenient melt-spinning, and higher C-yield of mesophase pitch. The high melt viscosity allows for continuous in situ drawing (mechanical tension) during melt-spinning and the subsequent thermal conversion processes. The corresponding process for turning this new precursor into carbon fiber products is a convenient one-step thermal heating process under inert atmosphere.

Application & Market Utility

The novel precursor will allow for cheaper, easier production of carbon fiber products while retaining the strength and quality of the material. The products could be used in automotives, aircraft and aerospace, and protective textiles.

Next Steps

Seeking licensing and collaboration. Patent pending.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Licensing | Research

Keywords

- carbon fiber precursor
- pitch precursor
- melt-spinning
- polyacrylonitrile (PAN)
- automotive materials

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