

# High-strength and modulus Carbon Nanotube Fibers

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## ABSTRACT

Carbon nanotube (CNTs) are known to have high mechanical strength and electrical conductivity, and low density [1]. Although CNTs have outstanding properties, CNT fibers (CNTFs) have not yet reached that level. To enhance mechanical properties of CNTFs, a few parameters including CNT length, alignment, densification, and cross-linking should be considered and optimized [2]. One promising approach to enhance mechanical properties may polymer-infiltration [3,4] and the introduction of cross-linking bonds between adjacent carbon shells [5]. Herein, I will present an effective method to make high-strength CNTFs through thermal treatment and cross-linking. The CNTFs produced by liquid crystalline and direct spinning process were also compared in terms of mechanical and electricla properties.

## References

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