

# Realization of a low carbon society through game changing technologies

## Control of Hierarchical Structure of Functional Composite Materials by Using Modified CNF

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### Summary :

This project aims at construction of fundamental technology for commercialization of citric acid-modified CNF by production of high-performance and functional polymers utilizing the modified CNF. Convenient large-scale production process of the citric acid-modified CNF and hydrophobically modified CNF for future commercialization is established. The developed modified CNF will enable weight reduction of plastics and toughness improvement of elastomers by complete dispersion of the CNF into the polymers. Environmentally benign high-performance catalysts are also prepared by using the modified CNF as matrix of alloy nanoclusters. The development of evaluation technology on hierarchical and interfacial structures of the modified CNF will elucidate relationships between structure and properties/functions of the products.

