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Organic-inorganic Hybrids for Novel Fiber Materials

MON FEB 13 | Bldg. 101
16:00 | Seminar room on the 1st floor

Organic-inorganic hybrid materials can achieve the multi-scale composites of organic polymers and inorganic materials in the nano or molecular level. On one hand, such hybrid materials can exert each component's characteristics. On the other hand, they reflect the unique collaboration features, such as new performance and multifunction. With the continuous development of industrial fiber materials, their applications continue to be expanded. One of our main research was the construction and application of polymer-based functional hybrid materials, including structural design, synthesis and preparation, functionalization and homogeneous dispersion of nano inorganic phases in polymer matrix. Consequently, A series of hybrid materials with different functional properties have already been developed, such as polyphenylene sulfide (PPS) fibers with anti-UV functions and multi-functional composite polyester (PET) fibers. Hydrogel fibers with stimulus-response properties were prepared via continuous methods. Various graphene-based hybrid fibers were developed by a facile, scalable, continuous wet-spinning method. Nano carbon/RGO hybrid fibers with porous structure and high conductivity exhibited very high power density. Pseudo-capacitive materials/RGO hybrid fibers with high pseudo-capacitance exhibited remarkably and improved capacitive performance. Polymer-based hybrid functional fibers have become a hot research topic in fields of materials science and engineering and have also achieved broad applications in fields of intelligent devices, security protection, biomedicine and energy as their accelerated advantages of organic and inorganic phases.

You are cordially invited to attend!

Special Guest Speaker