Special Issue

Applications of Hydrogels in Water Treatment Processes through Climate Change

Message from the Guest Editors

Superabsorbent hydrogels can help agriculture by absorbing large amounts of water. Superabsorbent hydrogels have lately received attention for their increased water holding capacity, decreased irrigation rate, and ability to enhance plant growth and save water. Rapid population growth and industrialization have indirectly increased natural concerns such as water, air, and soil contamination. Metals are the most dangerous toxins. Heavy metal poisoning of water is one of the most serious and complex ecological challenges. One of the uses of hydrogel in agriculture is slow-release fertilizers to decrease the quantity of fertilizers instead of conventional fertilizers, especially with increases in the price of fertilizers on the agriculture market. Egypt's biomass wastes provide biochar, which is made by pyrolyzing biomass waste. Biochar can increase soil quality and production in combination schemes, and biochar hydrogel composites are urgently needed for smart agriculture.

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