Chemical Modification of High Performance Polymers by Click Chemistry

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Abstract

Step growth polymers such as aromatic polyamides and polyesters constitute an important class of polymers which find applications in diverse fields. A large research efforts have been expended to improve the processability and thermal characteristics of these polymers by making use of appropriately designed difunctional monomers viz diamines, diacids and diphenols. Another important development in the recent years is the alteration of properties of these polymers by post polymerization modification of the various pendant functional groups intentionally introduced into these polymeric systems via suitable monomers. The presence of pendant alkynyl and alkenyl groups is of particular interest as they provide an useful platform for efficient post polymerization modification by click chemistry approach.

In the present seminar, I shall elaborate on our efforts directed towards design and synthesis of difunctional monomers containing pendant “clickable” groups viz. azido, alkynyl and alkenyl and high performance polymers namely aromatic polyamides and polyesters based on these monomers. The exploitation of pendant clickable groups in the chemical modification would be highlighted.