

Structure Control and Thermal Performance of Polyphthalamide with Different Molecular Architecture**Hong Yin**

Zhejiang University, China

Polyphthalamide (PPA) maintains excellent strength and toughness due to their aromatic nature and the distribution of terephthalic acid and adipic acid over the polymer chain plays an important role in PPA high-end structure and performance. This paper explores marvelous methods for preparing and structure control of copolymer PA66/PA6T with different sequences. Block PA66/PA6T was obtained from prepolymer which synthesized from diacyl terephthalate chloride, hexanedioyl dichloride and 1,6-hexamethylene diamine, and random PA66/PA6T was prepared through cryogenic solution polymerization. Alternating PA66/PA6T are gained by solid polymerization of

alternating salts which are tactfully synthesized from 1,6-hexamethylene diamine, dimethyl terephthalate and adipic acid. Thermal property and structure of all the copolymers are characterized the relationship between them is investigated. The results show that block PA66/PA6T has two melting points, respectively corresponding to the melting point of homopolymer aliphatic polyamide PA66 240°C and that of homopolymer semi aromatic polyamide PA6T 370°C, random PA66/PA6T the melting point of 340°C, between PA66 and PA6T, alternating PA66/PA6T 20°C higher than random PA66/PA6T due to alternative structural arrangement of the molecular units.

Biography:

She is an associate professor in chemical engineering and applied chemistry at Zhejiang University. She has published more than 120 papers in reputed journals and

has more than 30 authorized patents. She is the winner of National Second Prize of Technology Innovation and National Excellent Prize of Patent.