

演 題 : **Responsive polymer libraries**

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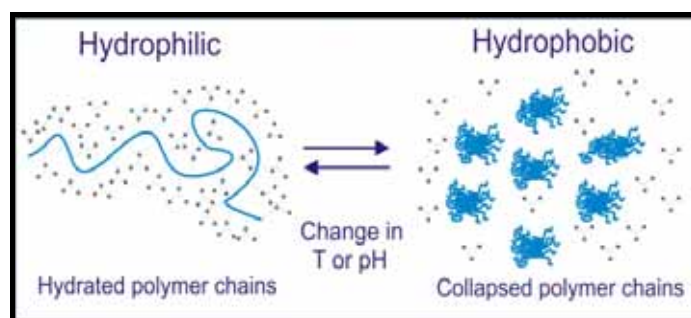
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要旨 :

Stimuli-responsive materials, also called “smart materials”, which can undergo phase transitions in response to external stimuli have already found application in various fields. Responsiveness of the materials can be based on several parameters such as temperature, pH, light, ionic strength or photochemical processes. Such polymers should exhibit reversible responsive behavior and require several cycles of measurements. We have focused on tuning the lower critical solution temperature (LCST) of these materials by using a combinatorial approach. Several libraries of responsive polymers were prepared in an automated fashion and extensive characterization techniques were employed. The LCST of copolymers could be adjusted from 15 to 100 °C by simply changing the copolymer composition. Multidimensional structure-property relationship plots were obtained and a corresponding mathematical formula has been generated for a model system in order to understand the combined effect of several parameters on the LCST behavior of responsive polymers.



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