

高分子学会九州支部外国人講演会

Poly(N-isopropylacrylamide): A Canadian Perspective

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日 時 : 3月16日(金) 11:15-12:00

場 所 : 理学部 大会議室

ABSTRACT

In the late 1960's J. Guillet reported for the first time the synthesis and solution properties of poly(N-isopropylacrylamide) (PNIPAM). He noted that, although this polymer was soluble in cold water, its solution promptly turned milky when heated above 32°C. Upon cooling the solution recovered its transparency. This phenomenon is at the root of numerous soft "intelligent" devices used in biotechnology and nanotechnology. From the theoretical viewpoint, the properties of PNIPAM have served as model of protein folding/denaturation and mesoglobule formation. Such developments would not have been possible without a thorough understanding of the physicochemical properties of PNIPAM in water monitored by fluorescence spectroscopy, microcalorimetry and light scattering. Our current understanding of the fascinating PNIPAM/water system will be presented.

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