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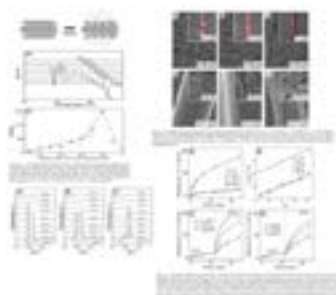
MATERIALS SCIENCE AND ENGINEERING

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Fatty acid-based electrospun fiber for temperature-controlled drug release

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This paper explains fatty acid-based electrospun fibers for temperature-controlled drug release. The polymer fibers have core-sheath structure. Rhodamine B-loaded polymer particles are enclosed in the core while the sheath contains biodegradable polymer and mixture of fatty acids. The mixture consists of two fatty acids with different melting points. At a specific composition, the mixture represents a single melting point 38-40°C which is slightly higher the normal human body temperature. This controllable melting of the mixture allows the temperature-regulated release of the dye from the fibers. Below its melting point, the mixture of fatty acids incorporated into the sheath will be in a solid state to restrict the passing of the dye molecules pre-loaded in the core whereas the molecules can be released instantly through the pores over the melting point. The release profiles of the dye molecules can be further manipulated by varying the amount of the mixture contained in the fibers.



Biography

Ji Hyeon Choi is a first year master course student in polymer science and engineering at Kyungpook national university in Republic of Korea under professor Dong Choon Hyun. She received her B.S. degree in polymer science and engineering from the same university..

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