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Electrospinning of cellulose acetate fibre and study on its structural and morphological change

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Electrospun polymer fibre is a major breakthrough in the biomedical field due to its remarkable contribution in fibre-based sensors, drug delivery, tissue engineering and medical diagnosis. This has been possible due to the multidimensional structures of nonwoven fibre mat which can be obtained by electrospinning by the control of process parameters. In this work cellulose acetate (CA) fibre mat was synthesized using a single solvent system of pure acetone and a solvent system of 2:1 acetone/N,N Dimethyl acetamide (DMAc). Scanning electron microscopy (SEM) analysis showed that CA with acetone yielded a mixture of ribbon and cylindrical shaped fibre whereas homogeneous cylindrical nanofibres were obtained with acetone/DMAc. Fourier transform infrared spectroscopy (FTIR) confirmed the peaks of CA. Electrical conductivities of CA solution were measured and found that the conductivity increased with decreasing fibre diameter.

Speaker Biography

Sushmita Majumder has completed her B.Sc. at the age of 25 years from Bangladesh University of Engineering and Technology (BUET), Bangladesh. At present she is enrolled in master's program in materials and metallurgical engineering at BUET. She has also been a lecturer in the same department of BUET since 2017. She is an enthusiastic young researcher who dreams to perform forefront research on materials science in her upcoming graduate program.

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