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Post polymerization functionalization of soluble poly(2,5-dithienylpyrrole)s

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Herein we disclose synthesis of an azide containing, soluble 2,5-dithienylpyrrole (SNS) based polymer and provide a pioneer study which demonstrates capability and versatility of click chemistry in efficient functionalization of the polymer. For this purpose, Chem-PSNS-N₃ was synthesized via chemical polymerization of 1-(2-azido-ethyl)-2,5-dithiophene-2-yl-1H-pyrrole (SNS-N₃) in the presence of FeCl₃. The resultant polymer was shown to be electroactive which could also be chemically doped via addition of SbCl₅. A versatile synthetic protocol for the post-functionalization of Chem-PSNS-N₃ with two different terminal alkynes was developed. The alkynes having ferrocene and fluorescein functionalities were deliberately chosen in order to manipulate the redox, optoelectronic, fluorescence and doping properties of poly(2,5-dithienylpyrrole)s. We are grateful to TUBITAK (Project No: 110T640) for the support of this study.

Biography

Pinar Camurlu received her BSc (1999), MSc (2001) and PhD (2006) degrees from Department of Chemistry at Middle East Technical University in Ankara, Turkey. She has been working as an Associated Professor in Department of Chemistry at Akdeniz University (Antalya, Turkey) since 2010. Her research is focused on the design and synthesis of functional conjugated polymers and their applications such as; electrochromic devices, light emitting diodes, biosensors and chemisensors. She has published more than 45 papers in SCI journals and took part as a co-author for three international scientific book chapters.

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