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## Poly(1,20-eicosanediyl 2,5-furandicarboxylate), a biodegradable polyester from renewable resources

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### ABSTRACT

Furanic-very-long-aliphatic polyester based on 2,5-furandicarboxylic acid and 1,20-eicosanediol was introduced as a new polymer from renewable resources that is biodegradable. This poly(1,20-eicosanediyl 2,5-furandicarboxylate) (**PE20F**) was extensively characterised by means of FTIR, <sup>1</sup>H and <sup>13</sup>C NMR, SEC, DSC, TGA, sorption experiments, water contact angles and biodegradation tests. **PE20F** has a melting temperature of 107 °C, a glass transition around 7 °C and moreover has a water contact angle of 96°, but nevertheless **PE20F** biodegraded.

### Keywords:

2,5-furandicarboxylic acid; 1,20-eicosanediol; very-long-chain diols; biodegradable; renewable resources

### 1. Introduction

Over the last decades, a general trend in polymer science towards the development of renewable-based materials instead of the traditional fossil oil-based

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