

Synthesis of natural / synthetic hybrid materials from cellulose via the RAFT process.

Debashish Roy, James T. Guthrie and Sébastien Perrier*

Department of Colour and Polymer Chemistry, University of Leeds, Woodhouse lane, Leeds LS2 9JT, UK

*Tel: +44 113 343 2932, fax: +44 113 343 2947 *s.perrier@leeds.ac.uk*

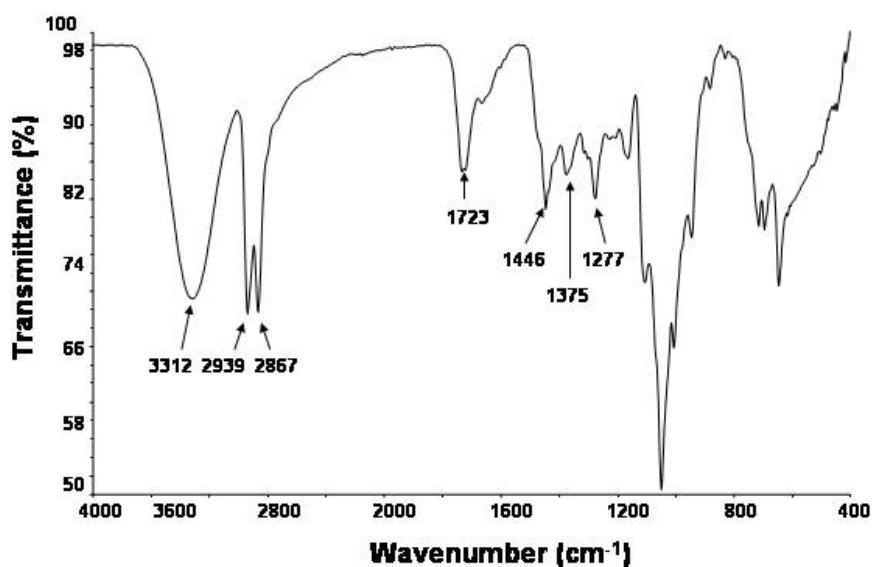


Figure 1 . ATR FT-IR spectra of cleaved PDMAEMA from cellulose backbone after acid hydrolysis showing a decrease in the $N(CH_3)_2$ group ($2939, 2867\text{ cm}^{-1}$) by comparison to the carbonyl group (1723 cm^{-1}) and the presence of a stretch at 1742 cm^{-1} characteristic of carboxylic acid.

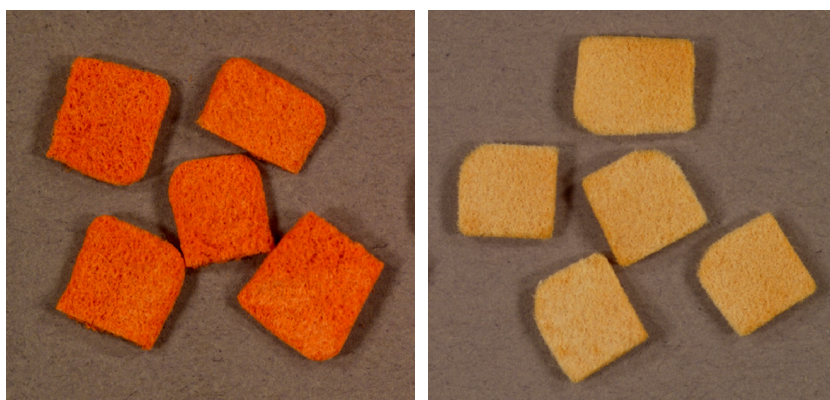


Figure 2 . Photograph of cellulose-g-PDMAEMA (a) before aminolysis and (b) after aminolysis

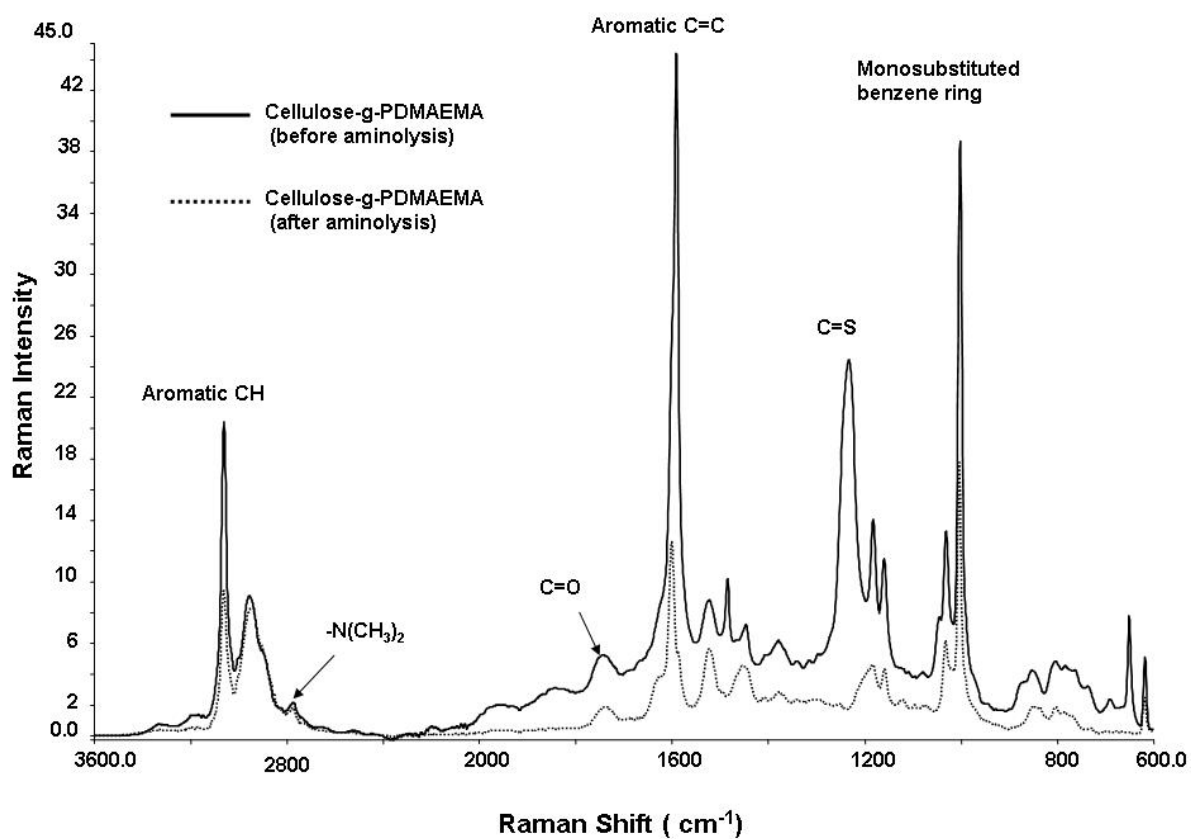


Figure 3. FT-Raman spectra of cellulose-g-PDMAEMA before and after aminolysis

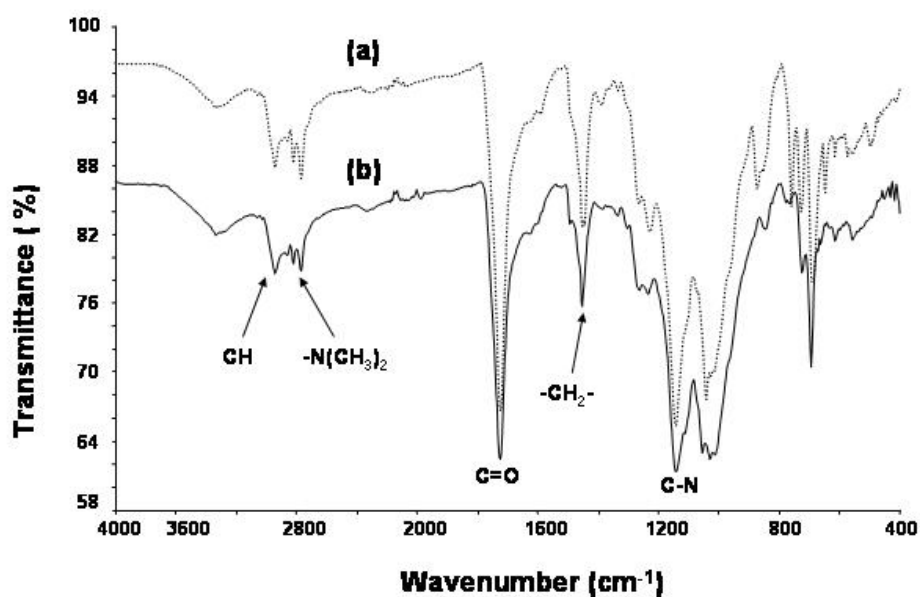


Figure 4. ATR FT-IR spectra of cellulose-g-PDMAEMA (a) before aminolysis and (b) after aminolysis

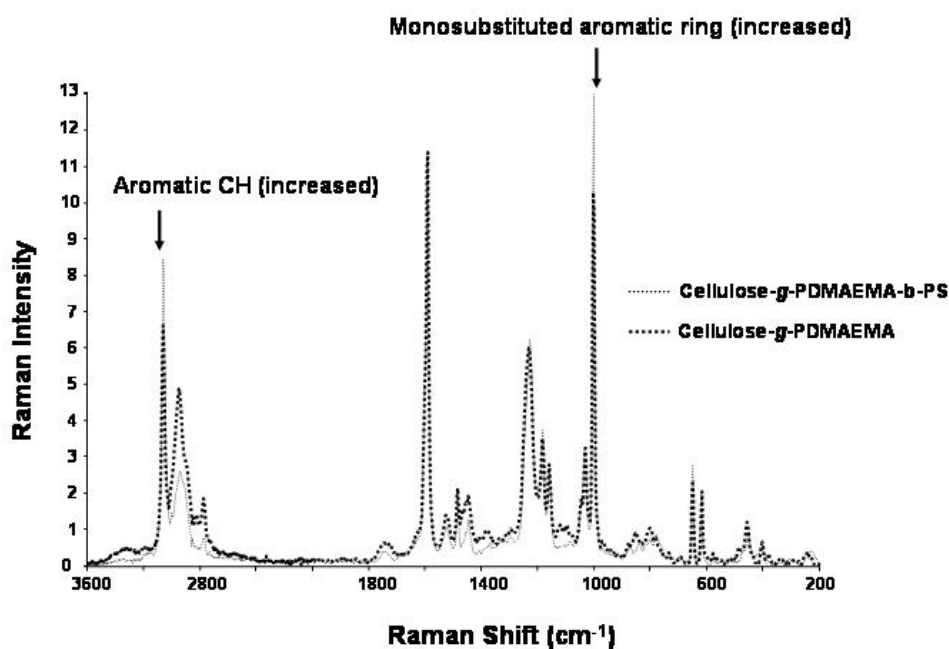
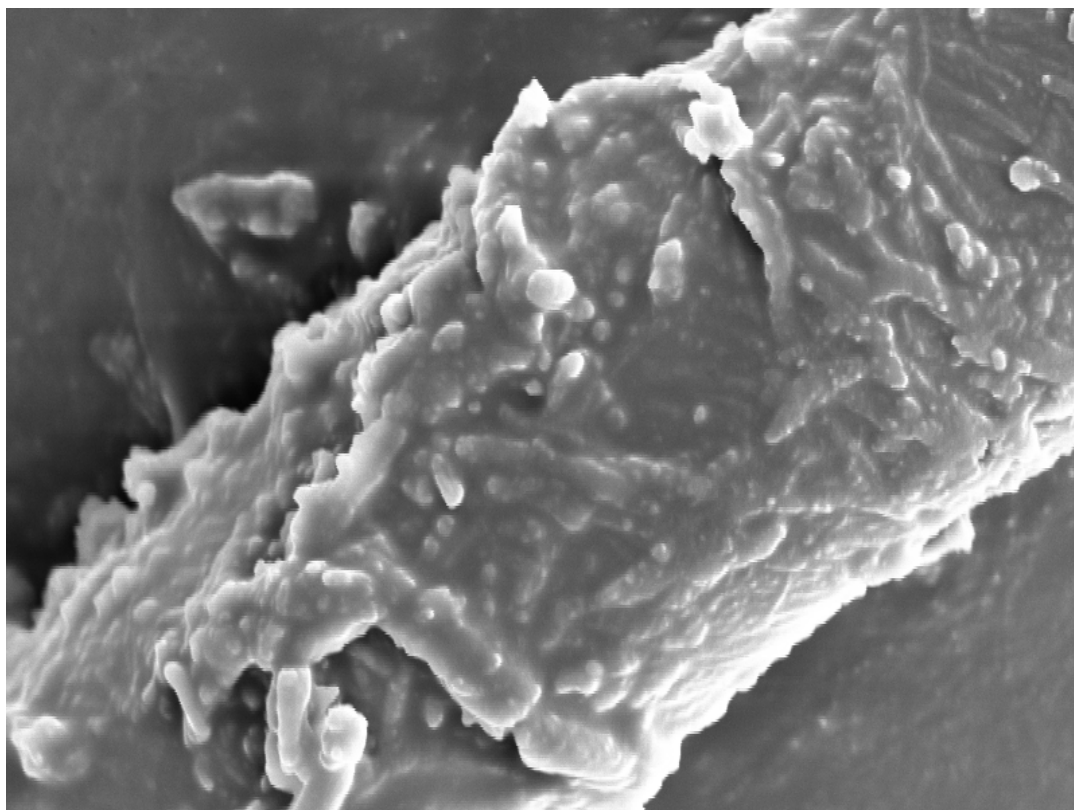


Figure 5. FT-Raman spectrum of cellulose-PDMAEMA before and after block extension with PSt



—10 μ m
×1200 Magnification

Figure 6. SEM photomicrograph showing the surface morphology of cellulose-g-(PDMAMEA-b-PS)