University of Groningen

Raman scattering and FT-IR spectroscopic studies on dithienylethene switches - towards non-destructive optical readout

de Jong, JJD; Browne, WR; Walko, M; Lucas, LN; Barrett, LJ; McGarvey, JJ; van Esch, JH; Feringa, BL; Lucas, Linda N.; Barrett, Lindsay J.

Published in:
Organic & Biomolecular Chemistry

DOI:
[10.1039/b603914f](https://doi.org/10.1039/b603914f)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2006

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

de Jong, JJD., Browne, WR., Walko, M., Lucas, LN., Barrett, LJ., McGarvey, JJ., van Esch, JH., Feringa, BL., Lucas, L. N., Barrett, L. J., & Esch, J. H. V. (2006). Raman scattering and FT-IR spectroscopic studies on dithienylethene switches - towards non-destructive optical readout. *Organic & Biomolecular Chemistry*, 4(12), 2387-2392. <https://doi.org/10.1039/b603914f>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Raman scattering and FT-IR spectroscopic studies on Dithienylethene Switches – towards non-destructive optical readout

Jaap J.D. de Jong, Wesley R. Browne, Martin Walko, Linda N. Lucas, Lindsay J. Barrett, John J. McGarvey, Jan H. van Esch, and Ben L. Feringa*

Supporting Online Information

IR data for compounds **1-4F** and **1-12H** was obtained (SOM-figure 1-16). Due to the low Photostationary states achievable for **9-10H**, only the open form IR data is shown. For other compounds spectra were obtained starting from the open (blue) and subsequent irradiation with UV light ($\lambda = 313\text{nm}$). Also, the closed form could be obtained by irradiation of acetonitrile solutions and deposition on KBr (green).

SOM Figure 1 FT-IR for compound **1F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 2 FT-IR for compound **2F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 3 FT-IR for compound **3F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 4 FT-IR for compound **4F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 5 FT-IR for compound **1H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 6 FT-IR for compound **2H**. blue = open from, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 7 FT-IR for compound **3H**. blue = open from, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 8 FT-IR for compound **4H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 9 FT-IR for compound **5H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 10 FT-IR for compound **6H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 11 FT-IR for compound **7H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 12 FT-IR for compound **8H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 13 FT-IR for compound **9Ho**.

SOM Figure 14 FT-IR for compound **10Ho**.

SOM Figure 15 FT-IR for compound **11H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

SOM Figure 16 FT-IR for compound **12H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

RAMAN data for **1-4Fo** and **1-4** & **6-10Ho** for the open form in the solid state.

SOM Figure 17 1F on solid state Raman

SOM Figure 18 2F on solid state Raman

SOM Figure 19 3F on solid state Raman

SOM Figure 20 4F on solid state Raman

SOM Figure 21 1H on solid state Raman

SOM Figure 22 2H on solid state Raman

SOM Figure 23 3H on solid state Raman

SOM Figure 24 4H on solid state Raman

SOM Figure 25 6H on solid state Raman

SOM Figure 26 7H on solid state Raman

SOM Figure 27 8H on solid state Raman

SOM Figure 28 9H on solid state Raman

SOM Figure 29 10H on solid state Raman

SOM Figure 30 Raman spectra of 2Fo to 2Fc (irradiation at 313 nm, λ_{exc} 785 nm, 6 * 20 s accumulations)

SOM Figure 31 Solid state and dilute solution Raman spectra (in acetonitrile, solvent subtracted) of **2Hc** and **2Fc**, λ_{exc} 785 nm, 6 * 20 s accumulations)