Supporting information

for

Aggregation and photodimerisation behaviour of cinnamoyloxy side chains of hyper-branched polymers determined by higher-order derivative spectra

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Fig. S1 Absorption spectra of DCi30 (a; dotted line), DCi20 (b; solid line), DCi40 (c; broken line) and DCi40-CI (d; solid line) in ethyl acetate.

Fig. S2 ED-diagrams for spectral changes of a dilute solution of EtCi in ethyl acetate upon exposure to 313 nm light.
Fig. S3 (a) ED- and (b) EDQ-diagrams for spectral changes of a dilute solution of Bz2Ci in ethyl acetate upon exposure to 313 nm light.

Fig. S4 (a) ED- and (b) EDQ-diagrams for spectral changes of a dilute solution of PVCi in ethyl acetate upon exposure to 313 nm light.
Fig. S5 (a) ED- and (b) EDQ-diagrams for spectral changes of a dilute solution of DCi40 in ethyl acetate upon exposure to 313 nm light.
Table S1: The sub-peak positions of the cinnamates in derivative spectra of fourth-order.

<table>
<thead>
<tr>
<th>Material</th>
<th>State</th>
<th>$\lambda_{\text{max}}$ / nm</th>
<th>Sub-peak position / nm</th>
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<td>1</td>
</tr>
<tr>
<td>EtCi</td>
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<td>266</td>
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<tr>
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<td>264</td>
</tr>
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<tr>
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a) Solution in ethyl acetate.
b) Data from 8th derivative spectra