Electronic Supplementary Material (ESI) for Journal of Materials Chemistry

Structure properties relationships of liquid crystal bent core organic semiconductors based on benzo[2,1-b:3,4-b']dithiophene-4,5-dione

Hecham Aboubakr,[a] M.-Gabriela Tamba,[b] Abdou Karim Diallo,[a] Christine Videlot-Ackermann,[a] Lénaïk Belec,[c] Olivier Siri,[a] Jean-Manuel Raimundo,*[a] Georg H. Mehl*[b] and Hugues Brisset*[c]

Figure S1: TGA curves and degradation temperatures of **LC**-diketones **1** and **2** in nitrogen with a heating rate of 20°C/min

Figure S2: DSC scan of **LC**-diketones **1** (top) and **2** (bottom) at a scanning rates of 5°C/min and 10°C/min.

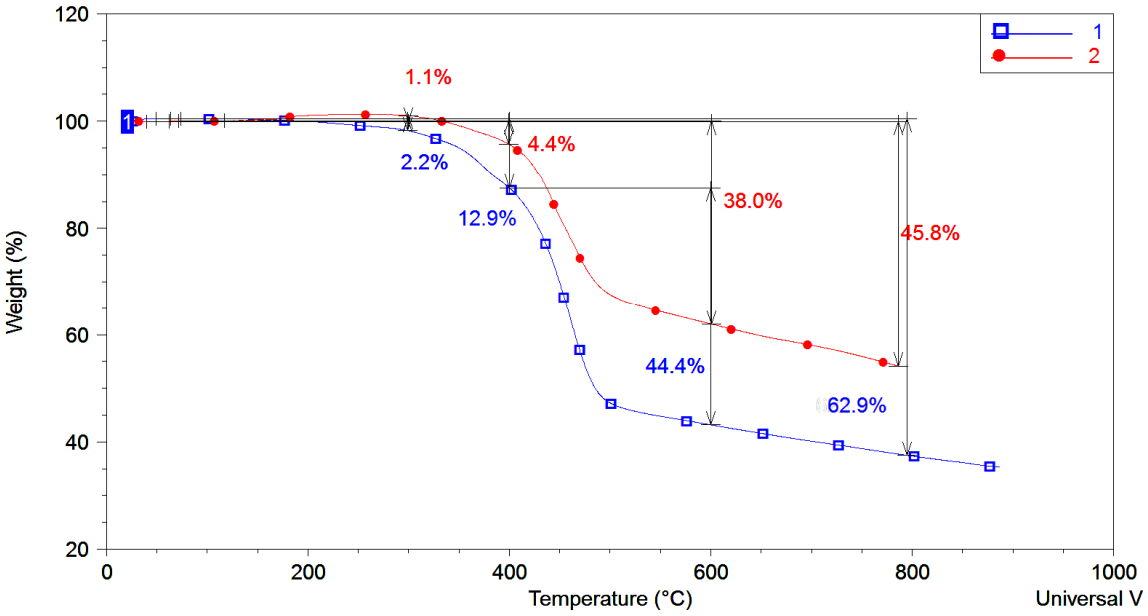
Figure S3: Optical polarizing microscopy of **LC**-diketone **1.** (top) N phase at T = 137 °C, between crossed polarizers, magnification 10x, on cooling from the isotropic state (down) N phase at T = 130 °C, between crossed polarizers, magnification 10x, on cooling from the isotropic state

Figure S4: Optical microscopy images of a **LC**-diketone **2** based thin film deposited by vacuum evaporation in: (a) BGBC configuration with interdigitated source and drain electrodes and (b) BGTC configuration with linear source and drain electrodes. Optical microscopy images were realized after an annealing at 90°C during 90 min as post-treatment.

Figure S5: AFM picture and corresponding cross-section of **LC**-diketones **1** (top) and **2** (down) based thin film deposited by vacuum evaporation on Si/SiO_2 substrate without annealing as post-treatment.

Figure S6: Optical microscopy images of thin films deposited by drop casting in BGBC configuration with linear source and drain electrodes from solutions of **LC**-diketone **2**: (a) in dichloromethane (C = 4.17 mg/mL) and (b) in chlorobenzene (C = 8.35 mg/mL). Optical microscopy images were realized after an annealing at 110°C during 3 h as post-treatment.

Figure S7: ^{1}H NMR of **LC**-Diketones **1** (top) and **2** (down).



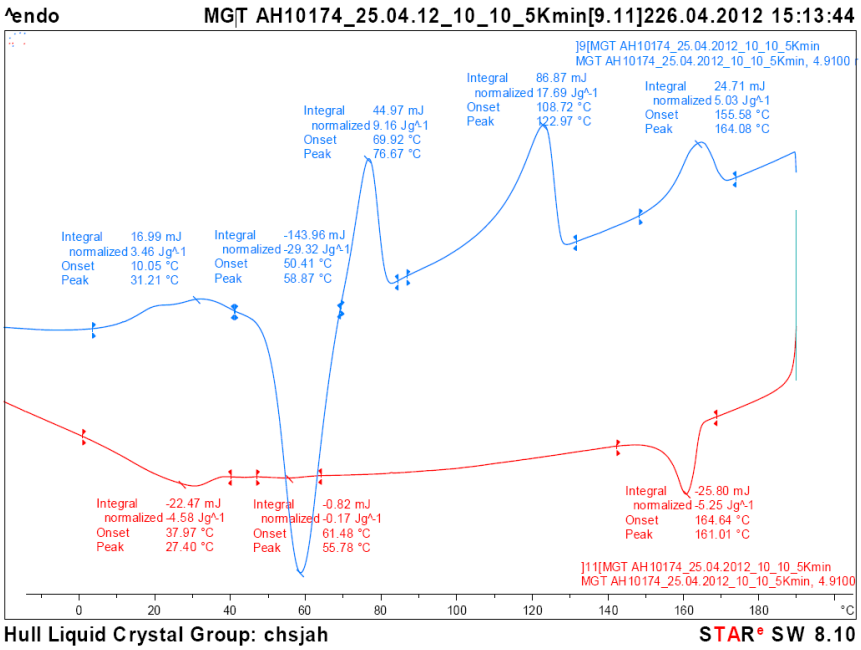
LC-diketone **1**	LC-diketone **2**
317 °C	360 °C
372 °C	440 °C
460 °C	470 °C

Table: Main degradation temperatures determined by TGA under nitrogen
(Inflexion points on weight-change curve)

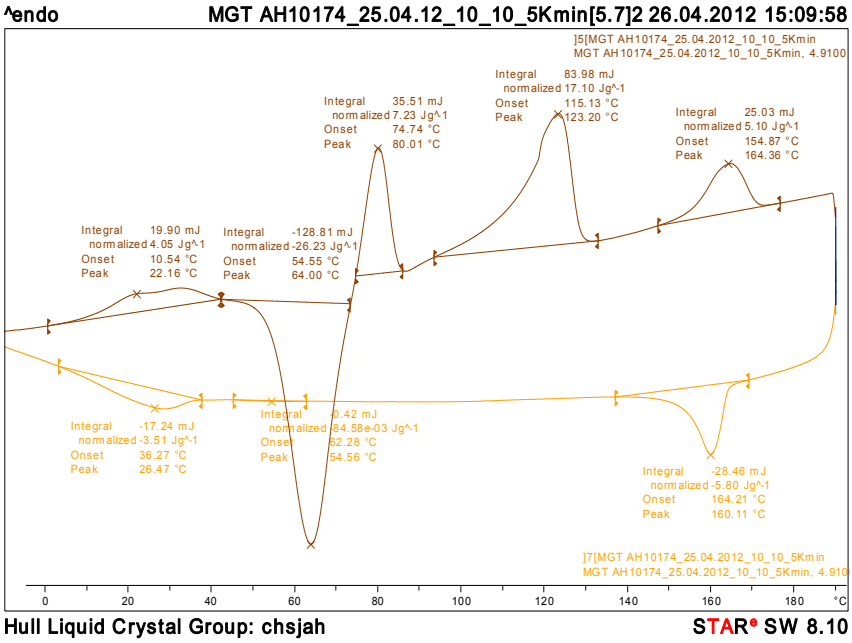
Figure S2: TGA curves and degradation temperatures of **LC**-diketones **1** and **2** in nitrogen with a heating rate of 20°C/min

LC-diketone **1**

5 °C/min

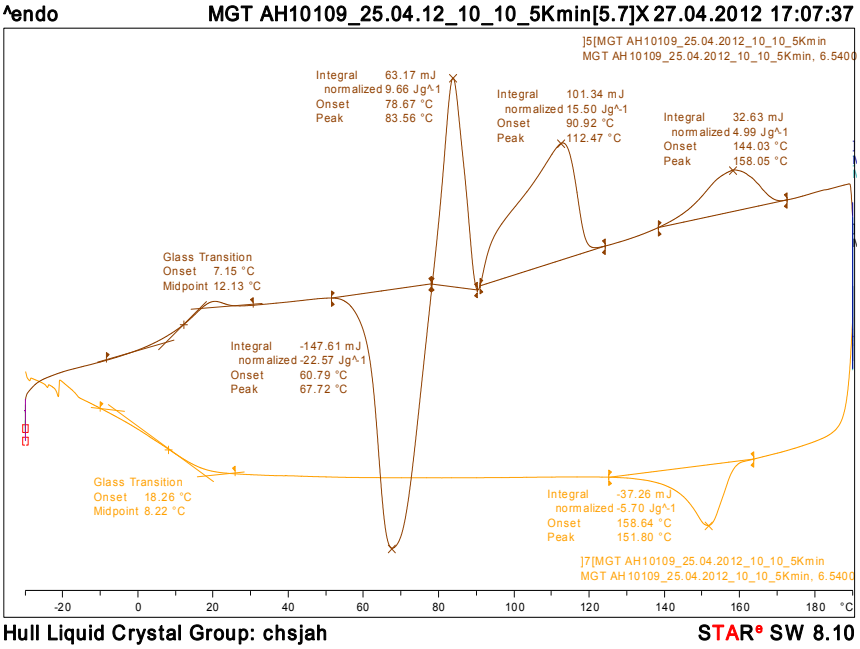


10 °C/ min

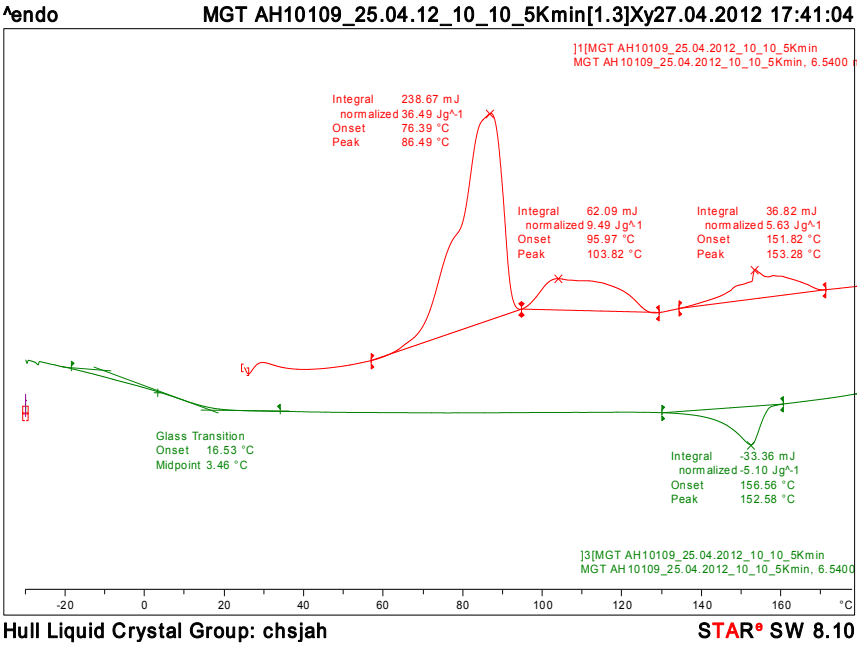


LC-diketone **2**

5 °C/ min



10 °C/min



First run 10K/min; second run 10K/min ; third run 5K/min. This it is way it says on the top 10_10_5.

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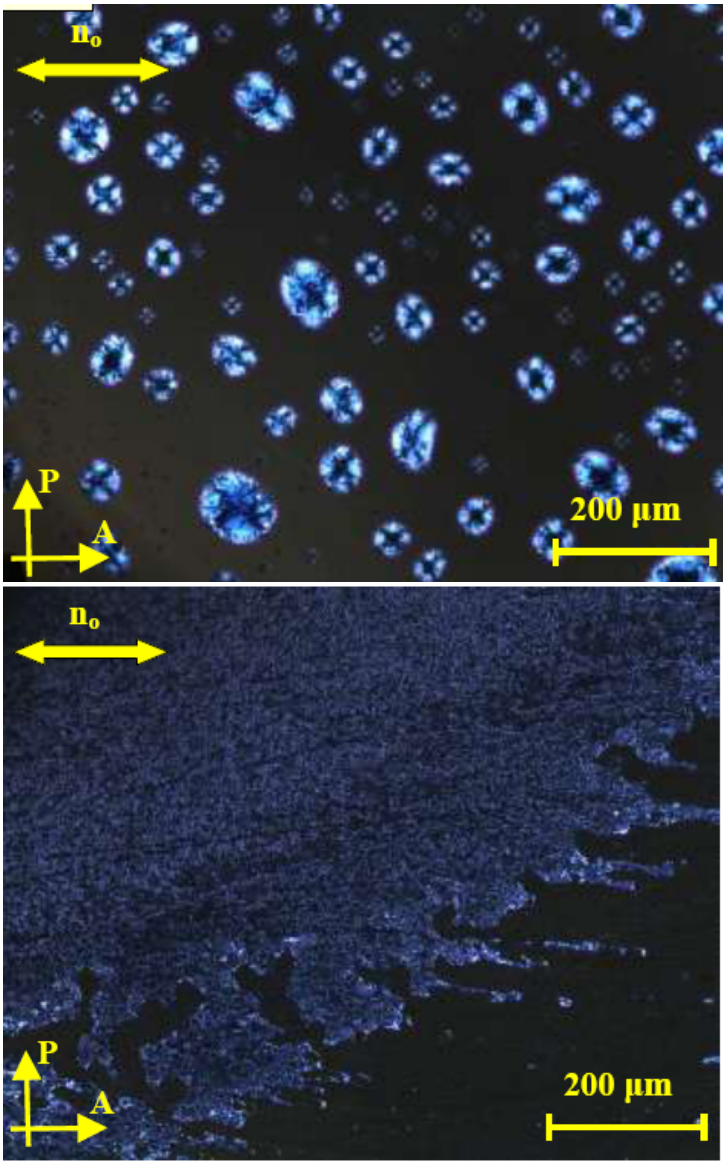

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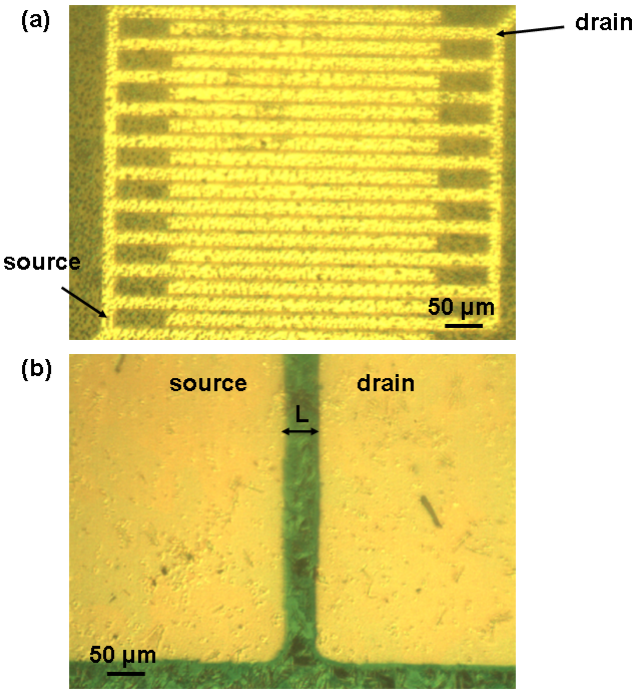

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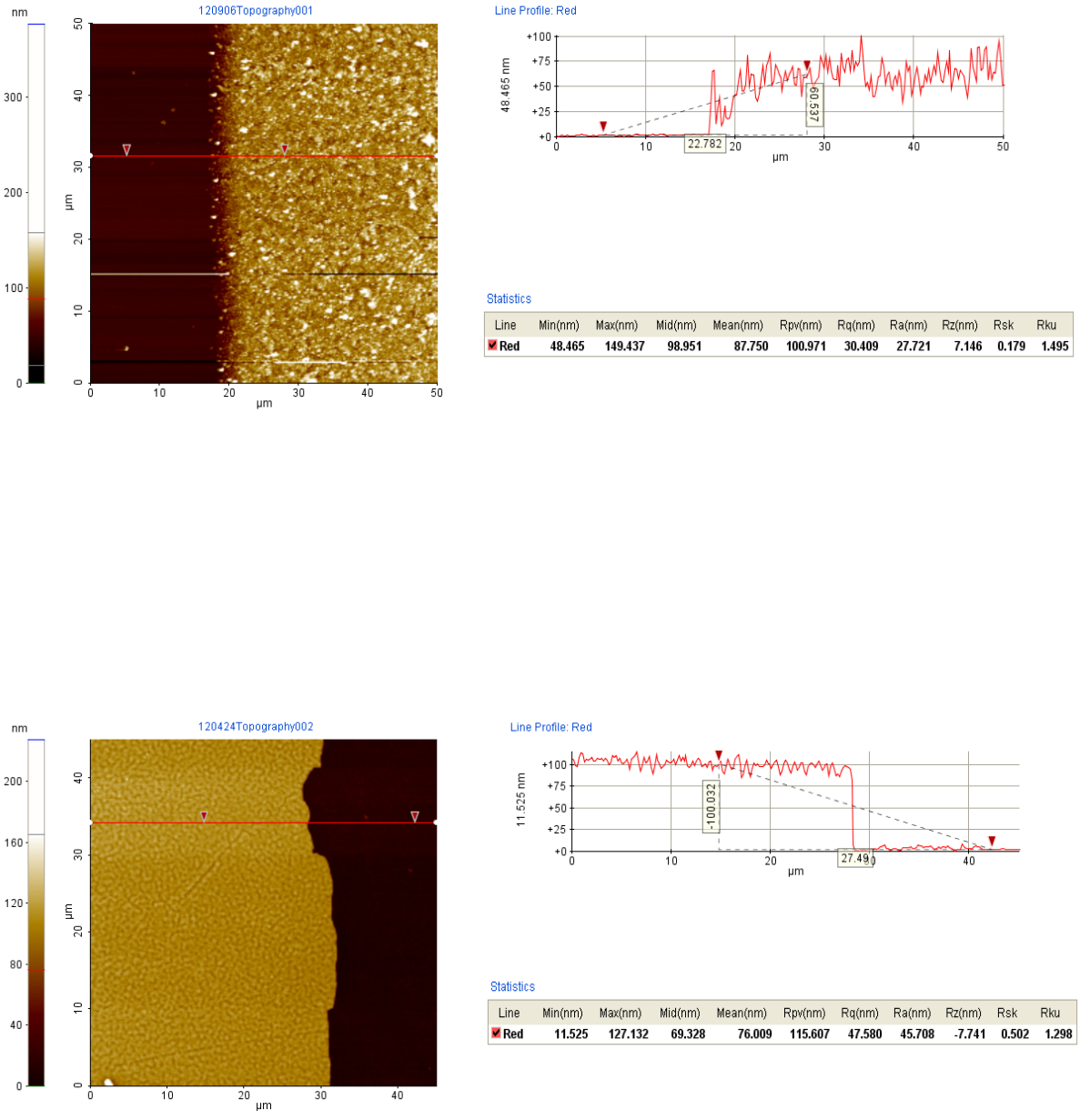

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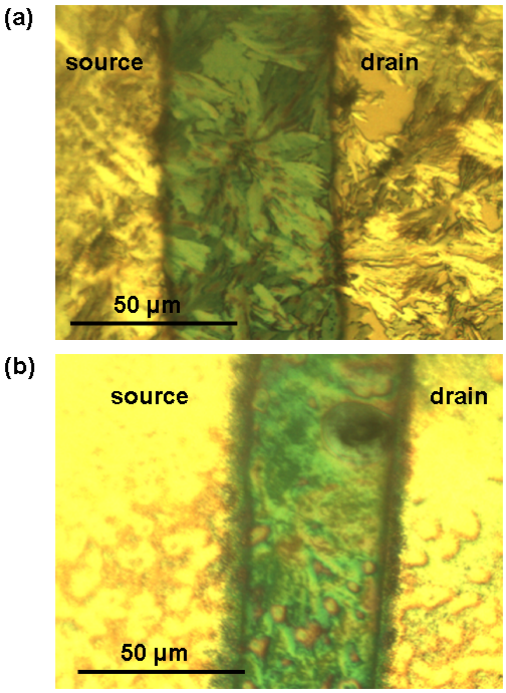

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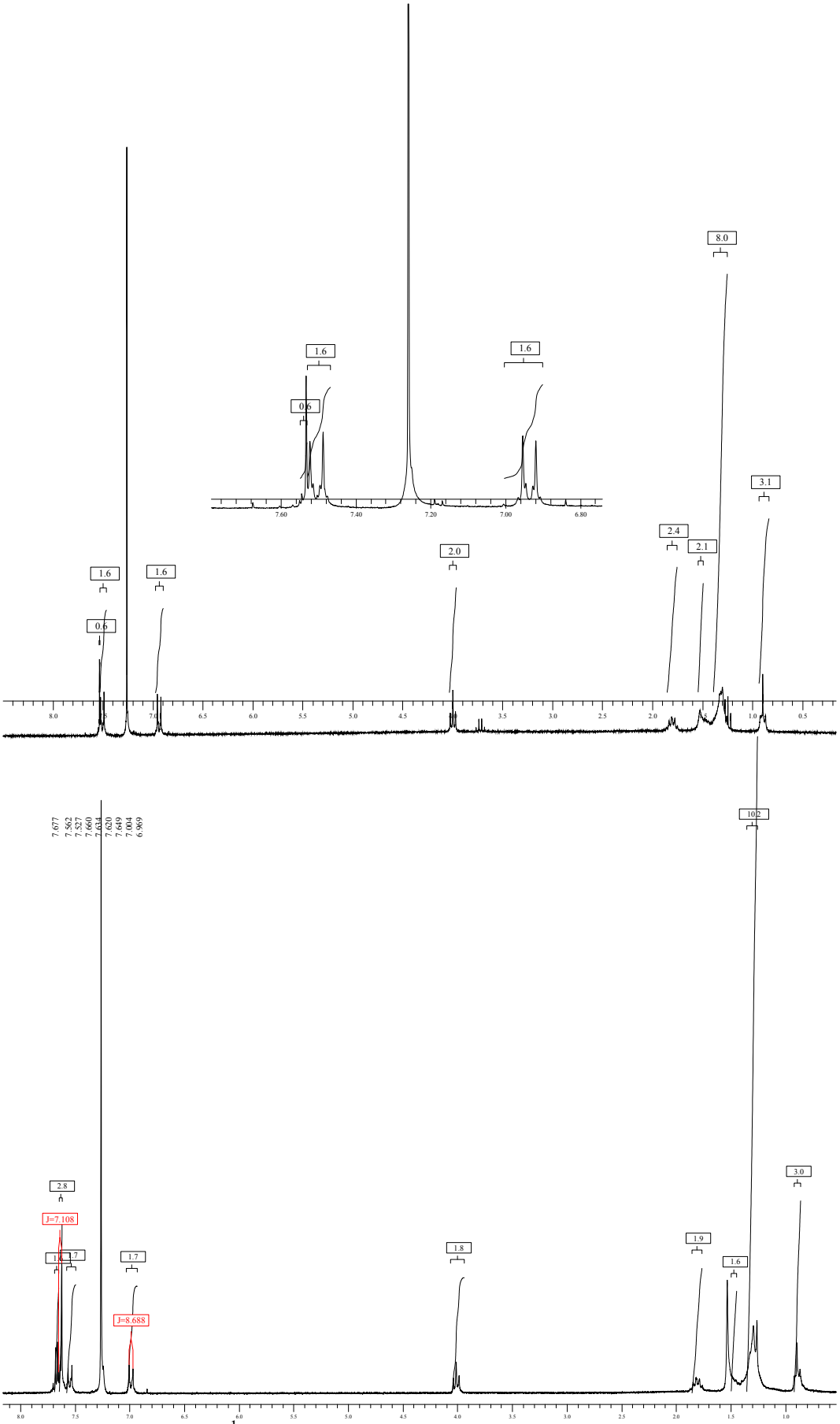

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