

## Supplementary Information

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### Design and preparation of Fe<sub>3</sub>O<sub>4</sub>@PVA polymeric magnetic nanocomposite film and surface coating by sulfonic acid via in-situ methods and evaluation of its catalytic performance in the synthesis of dihydropyrimidines

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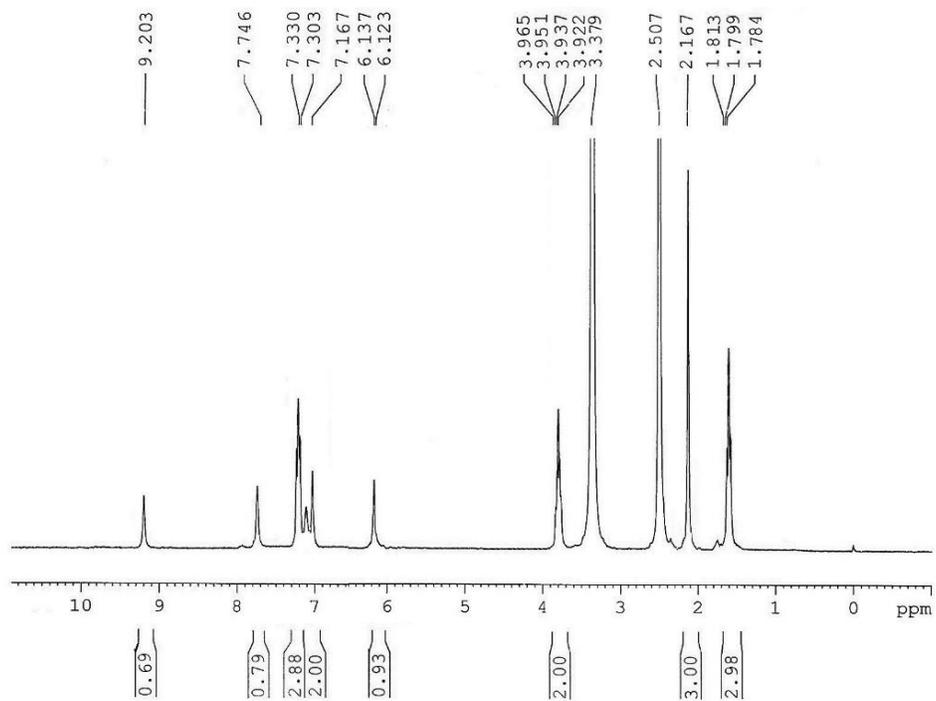
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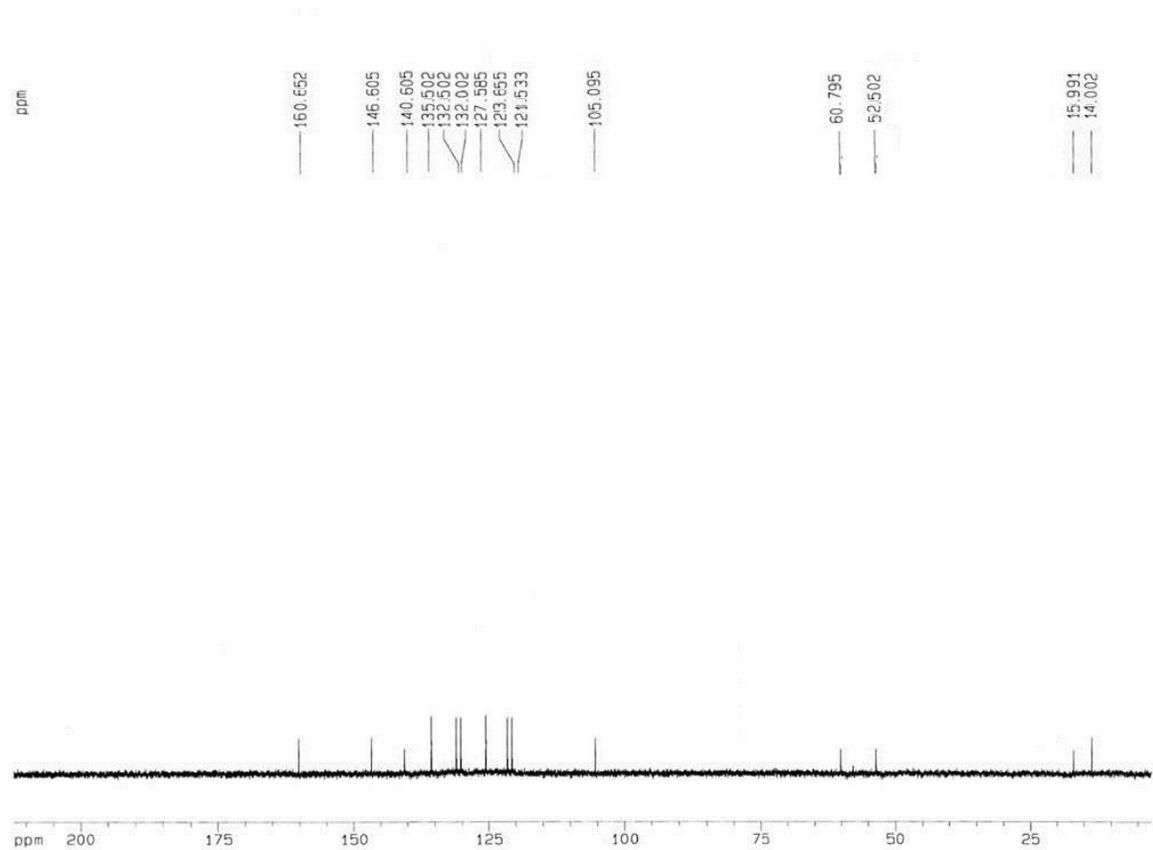
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<sup>1</sup>H NMR



**Figure S1.** <sup>1</sup>H NMR spectrum of the product **4c**.



**Figure S2.** <sup>13</sup>C NMR spectrum of the product **4c**.

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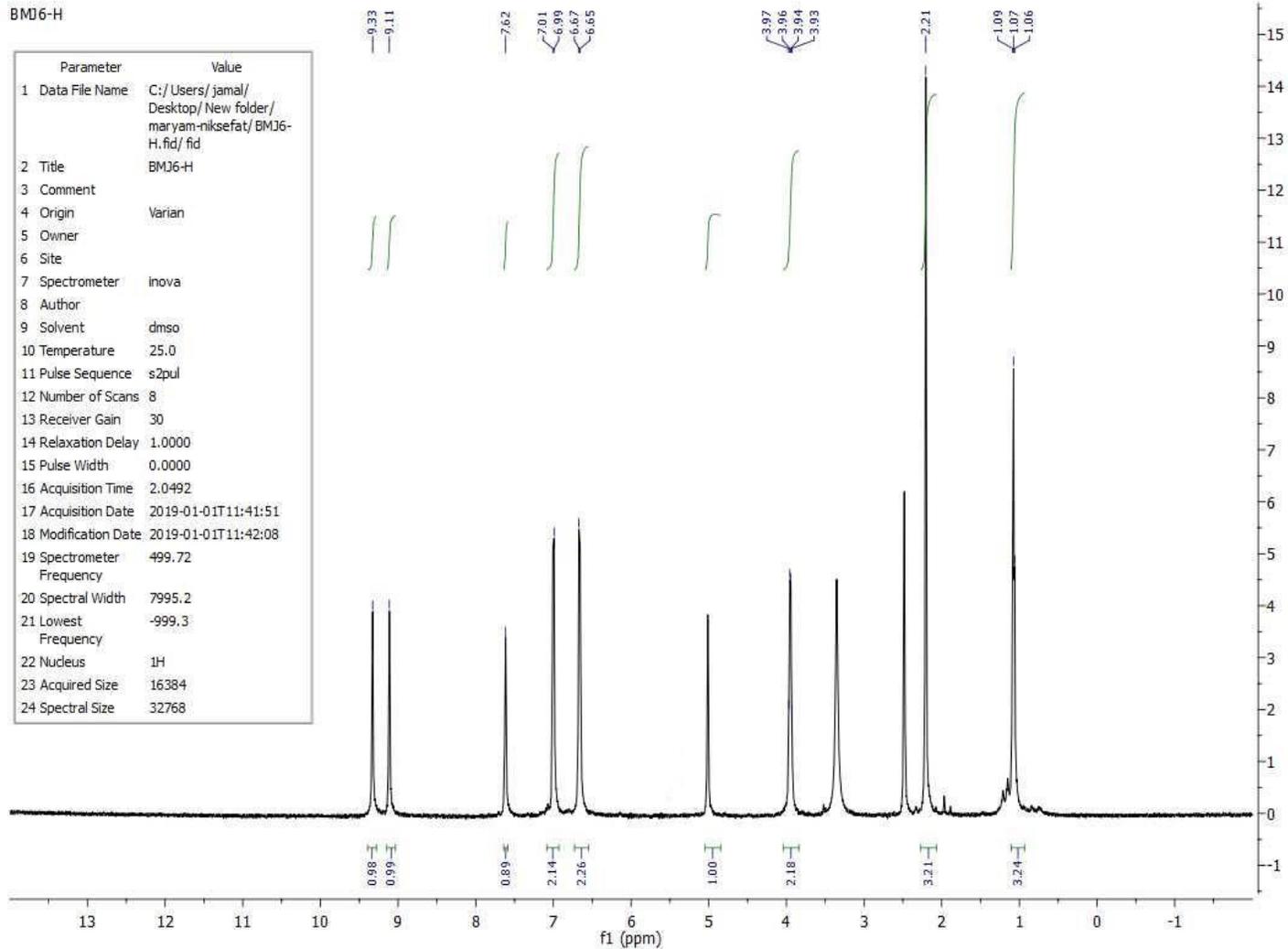
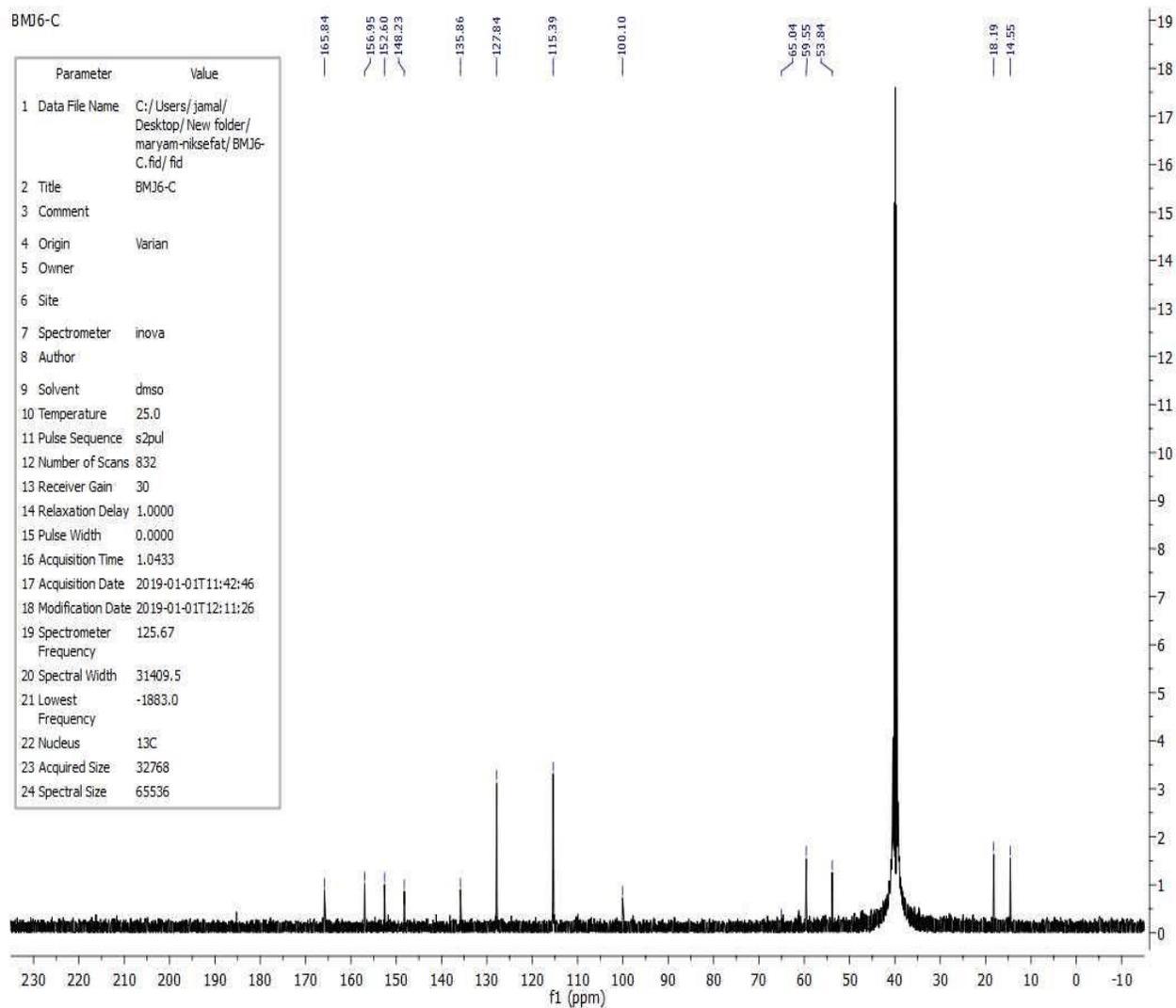


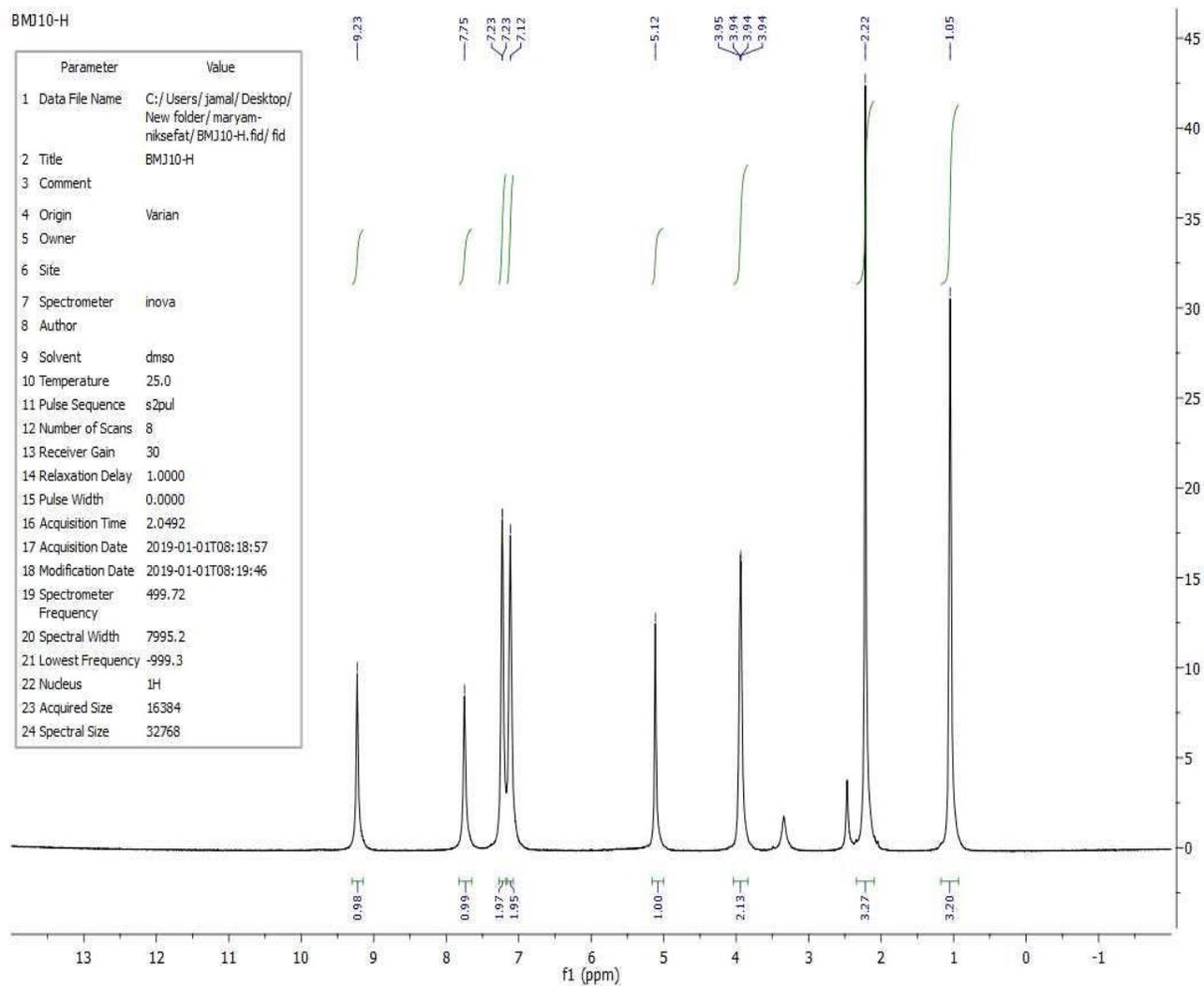
Figure S3. <sup>1</sup>H NMR spectrum of the product **4f**.

BMJ6-C

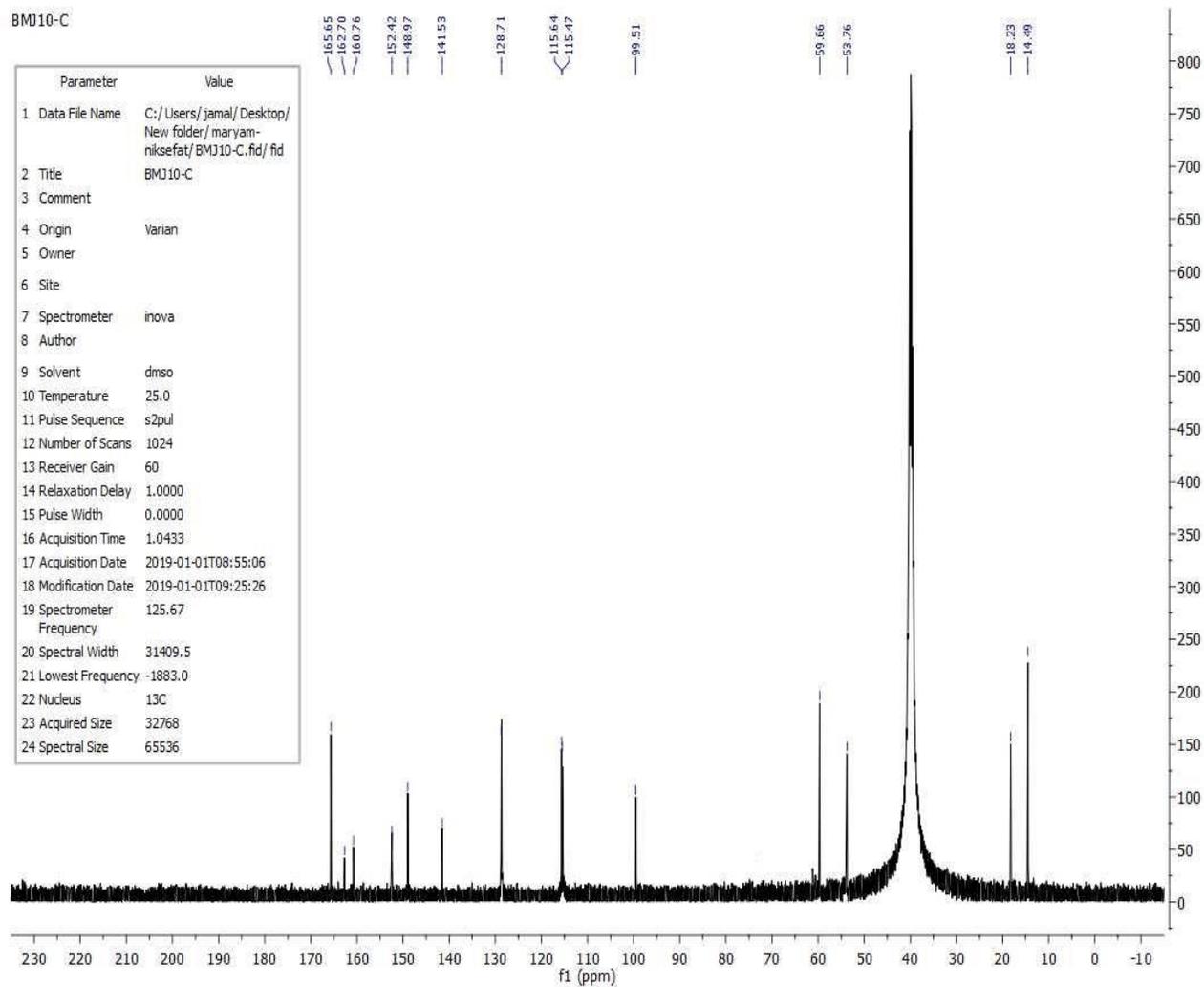
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21 Lowest Frequency	-1883.0
22 Nucleus	<sup>13</sup> C
23 Acquired Size	32768
24 Spectral Size	65536



**Figure S4.** <sup>13</sup>C NMR spectrum of the product **4f**.



**Figure S5.** <sup>1</sup>H NMR spectrum of the product **4j**.



**Figure S6.** <sup>13</sup>C NMR spectrum of the product **4j**.

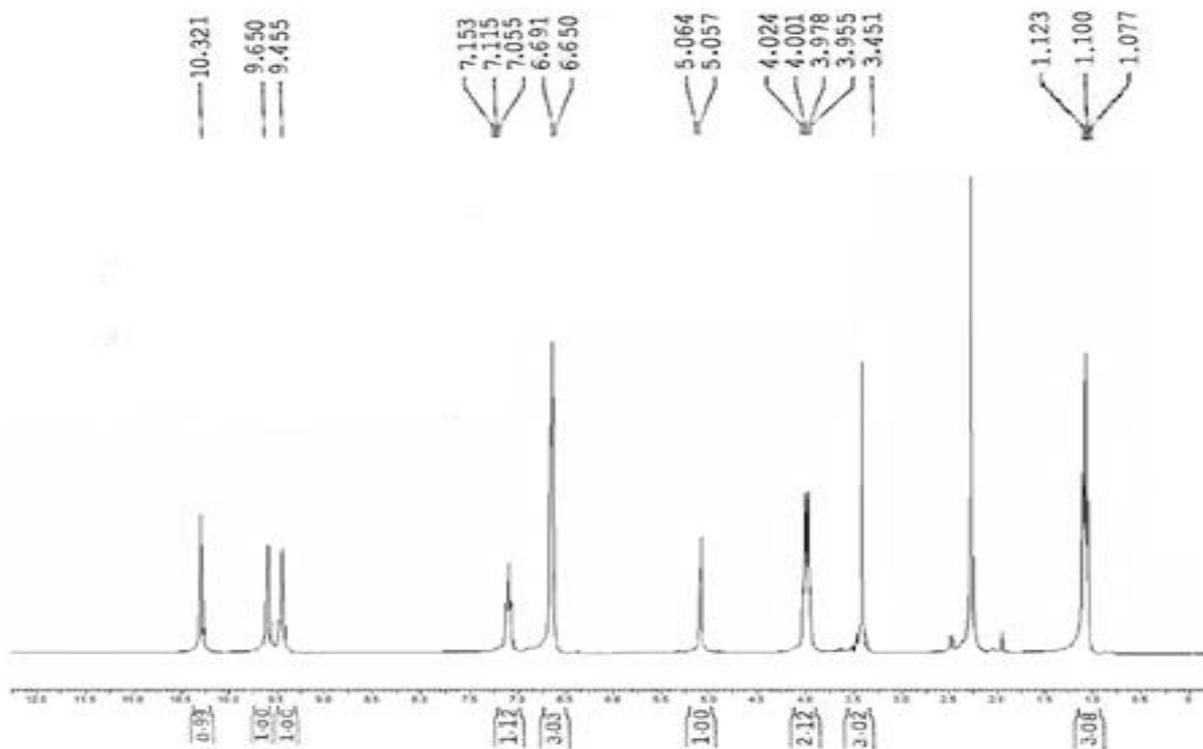
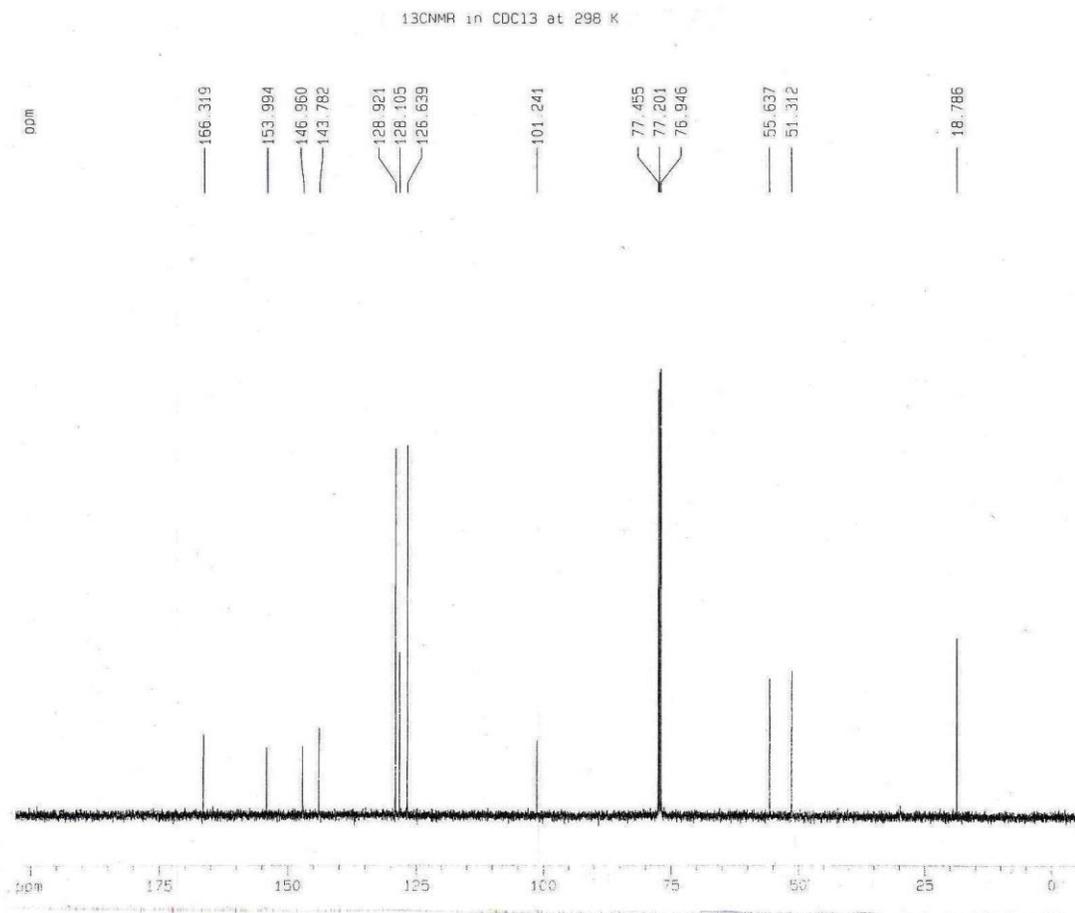
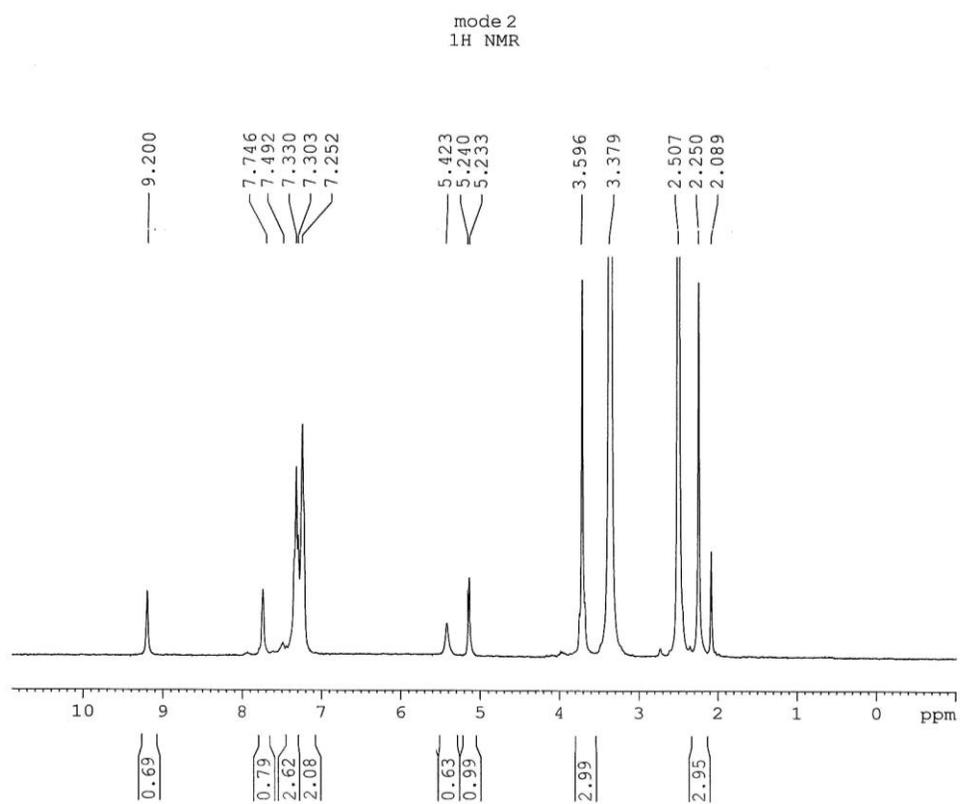


Figure S7.  $^1\text{H}$  NMR spectrum of the product **4r**.

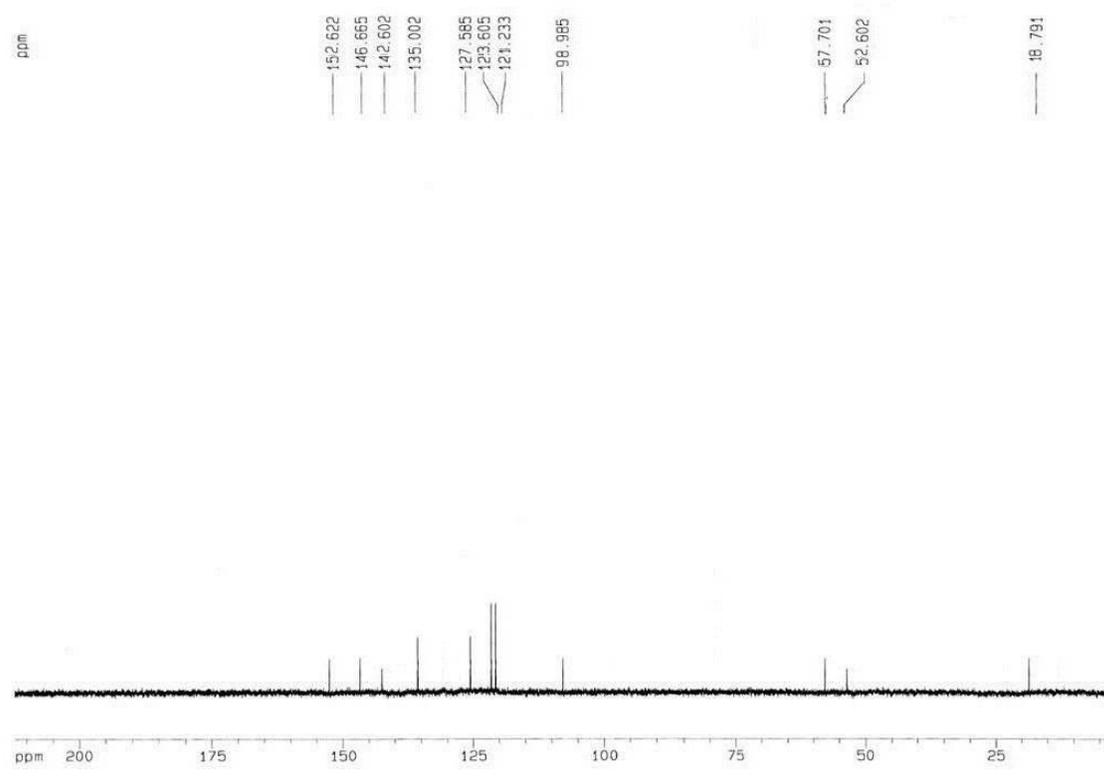




**Figure S9.**  $^{13}\text{C}$  NMR spectrum of the product **4s**.

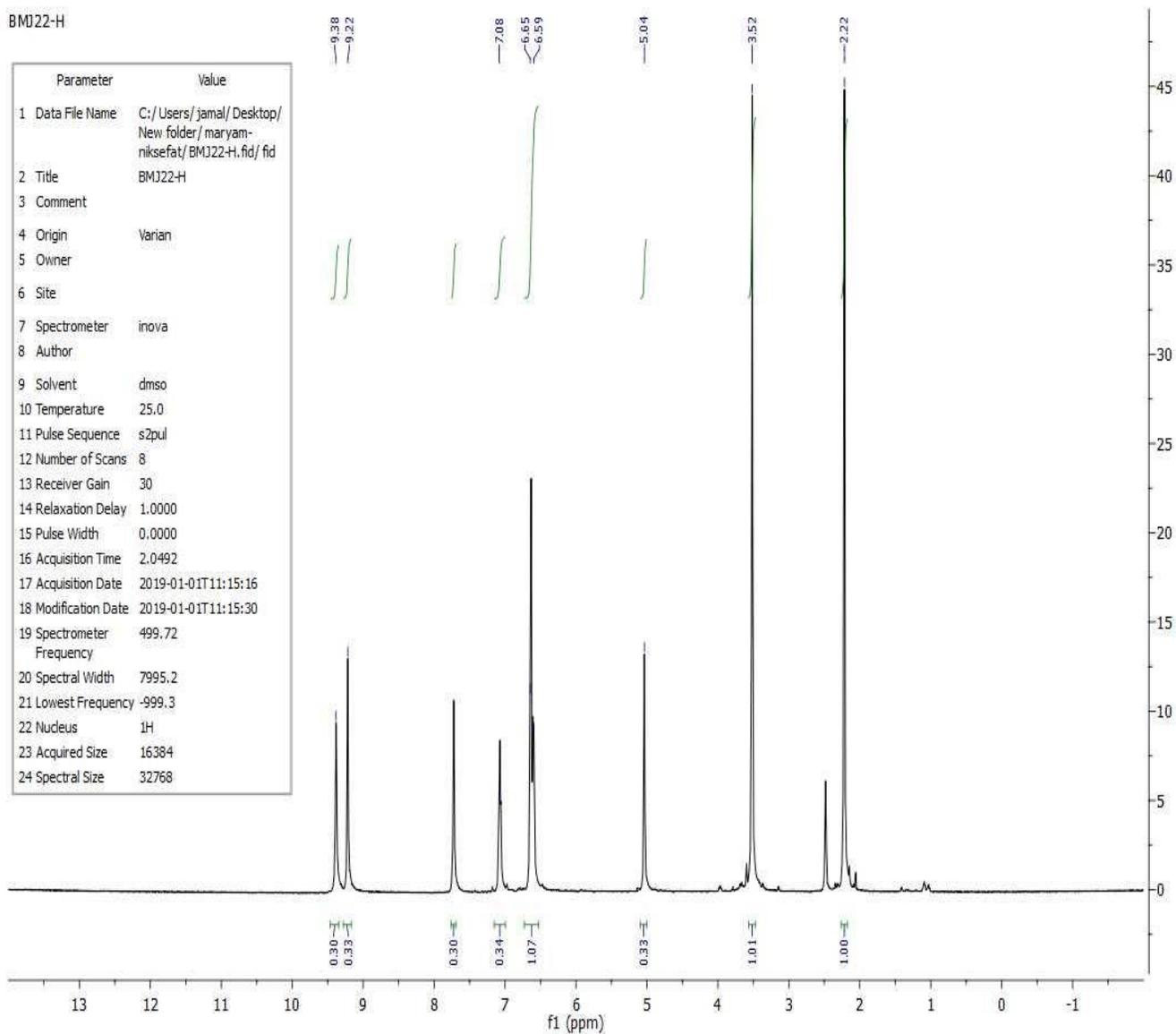


**Figure S10.**  $^1\text{H}$  NMR spectrum of the product **4t**.



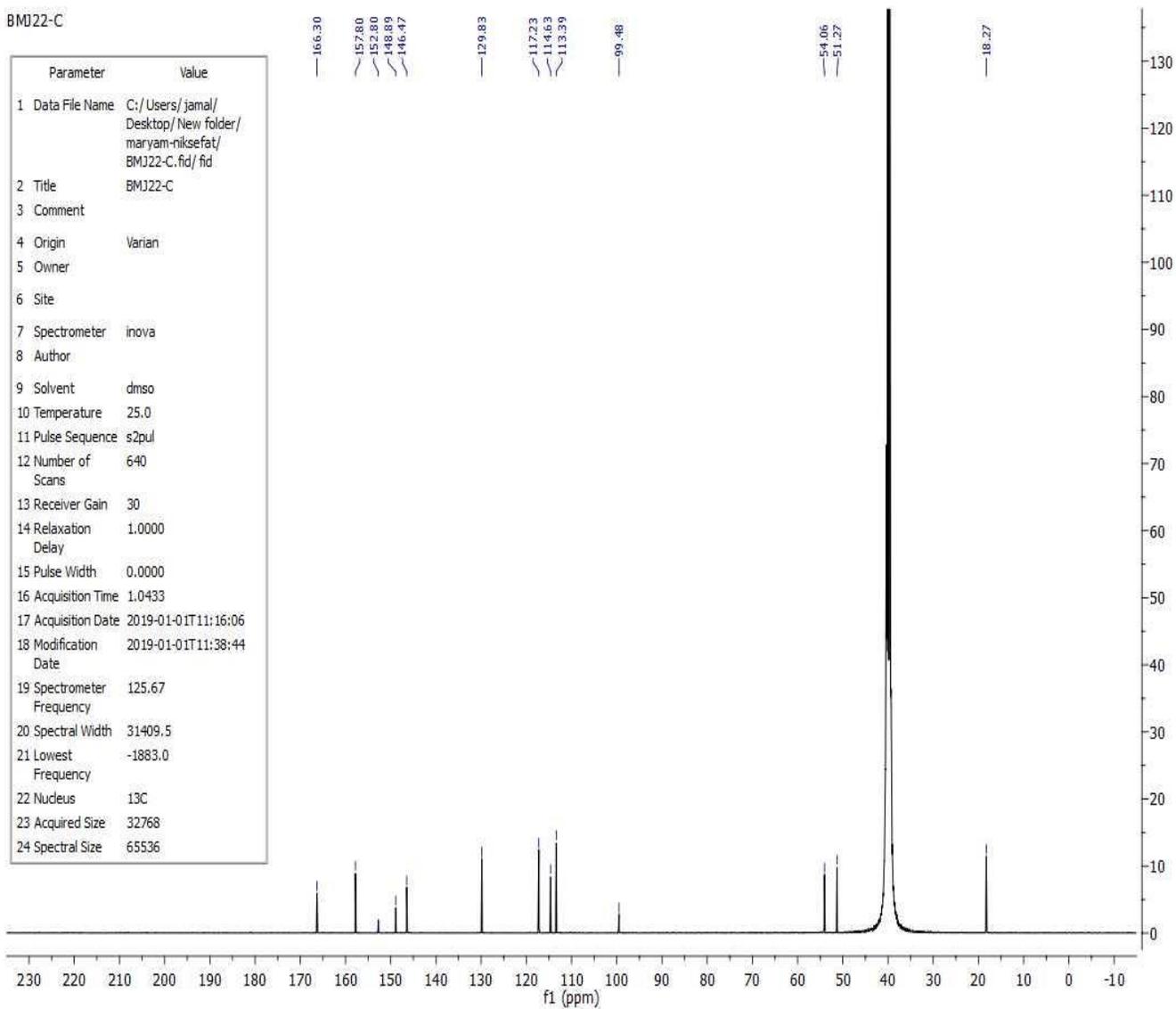
**Figure S11.** <sup>13</sup>C NMR spectrum of the product **4t**.

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**Figure S12.** <sup>1</sup>H NMR spectrum of the product **4v**.

BMJ22-C



**Figure S13.**  $^{13}\text{C}$  NMR spectrum of the product **4v**.