

1 *Supplementary data for*

2 **Study of the Effects of the Structure of**
3 **Phthalazinone's Side-group on the Properties of the**
4 **Poly(phthalazinone ether ketone)s Resins**

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15 **This supporting information is composed of the total of 7 pages, including 7 Figures**

16 **Page 2-5:**

17 **Figure S1.** 1H-NMR and 13C-NMR patterns of the prepared monomers, (a) is 1H-NMR and (b) is 13C-NMR.

18 **Figure S2.** 2D NMR spectrum of DHPZ-M and DHPZ-Ph: (a) is HMBC of DHPZ-M, (b) is HMBC of DHPZ-Ph,
19 (c) is HSQC of DHPZ-M and (d) is HSQC of DHPZ-Ph

20 **Figure S3.** The HRMs spectrum of DHPZ-M and DHPZ-Ph: (a) is DHPZ-M and (b) is DHPZ-Ph.

21 **Figure S4.** FTIR pattern of the DHPZ-M

22 **Figure S5.** The GPC traces of PPEK, PPEK-M and PPEK-Ph.

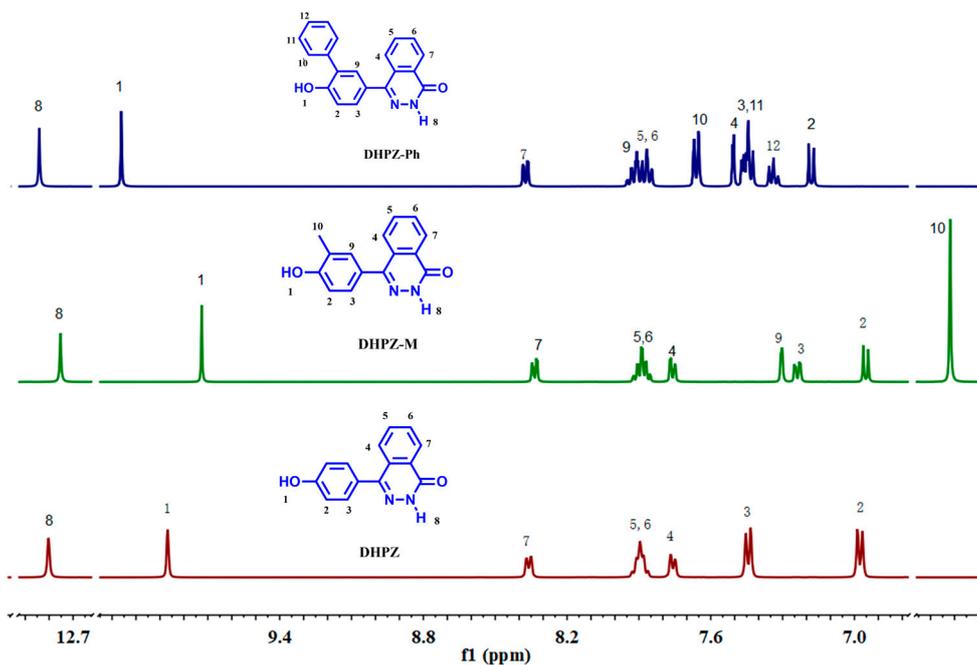
23 **Figure S6.** The WAXD patterns of PPEKs resins.

24 **Figure S7.** The stress-strain curves of the resin (PPEK, PPEK-M and PPEK-Ph).

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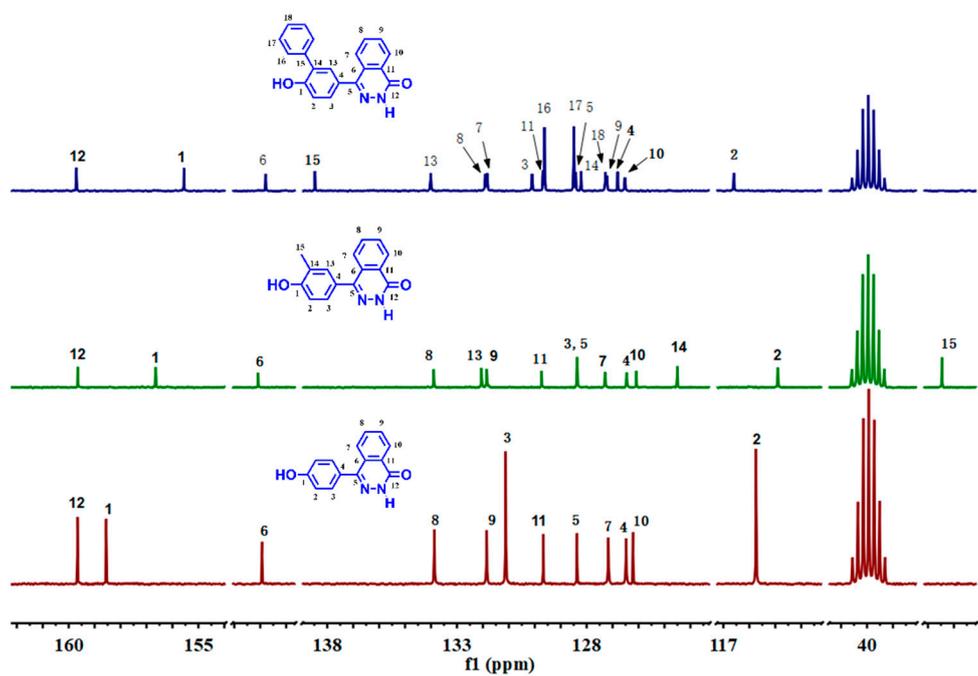
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(a)



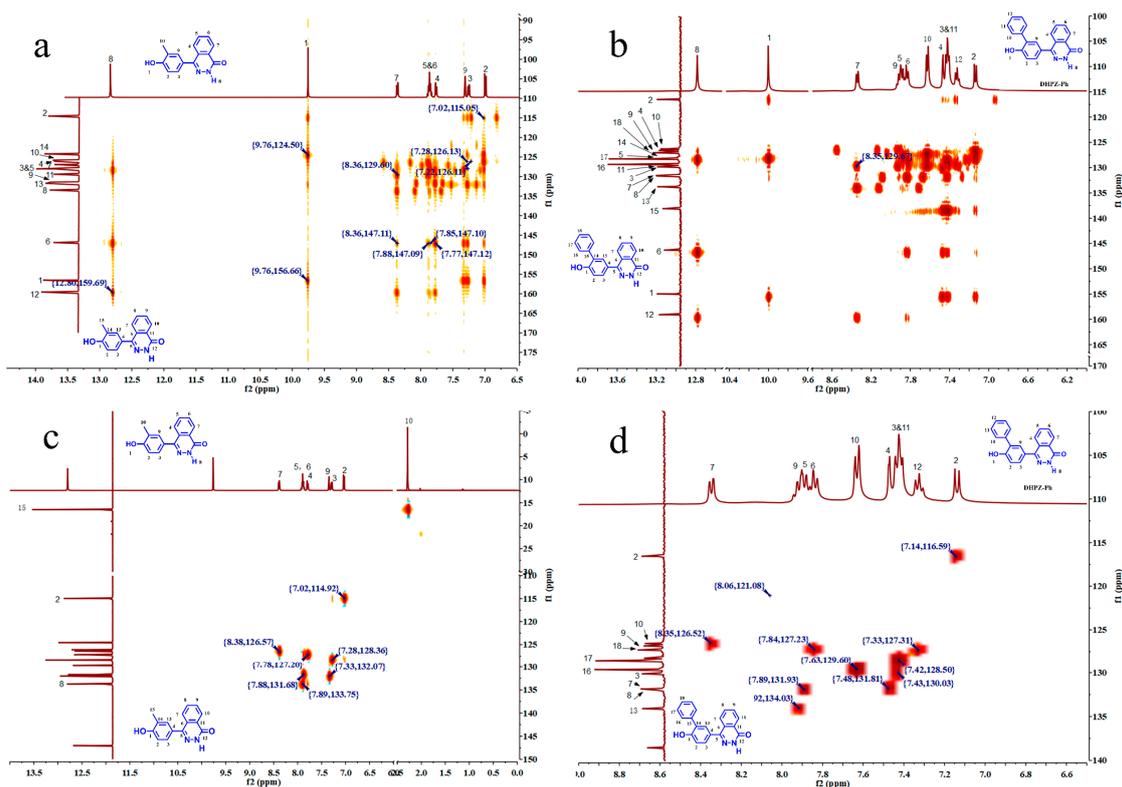
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(b)

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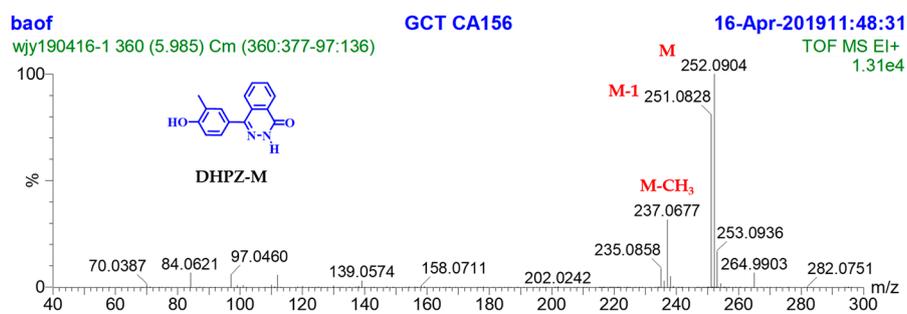
Figure S1. ¹H-NMR and ¹³C-NMR patterns of the prepared monomers, (a) is ¹H-NMR and (b) is ¹³C-NMR.



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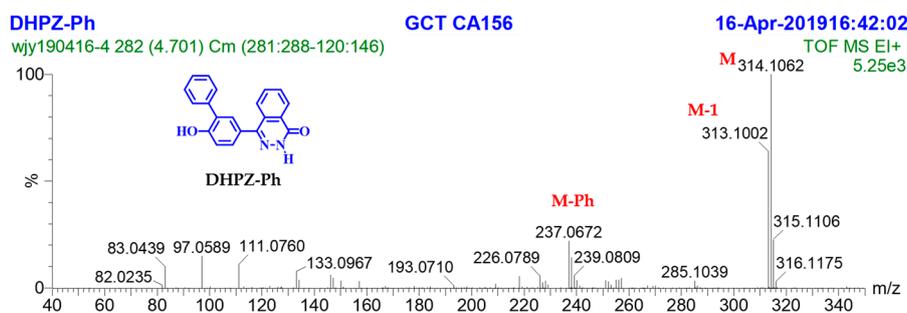
44 **Figure S2.** 2D NMR spectrum of DHPZ-M and DHPZ-Ph: (a) is HMBC of DHPZ-M, (b) is HMBC of DHPZ-Ph,
 45 (c) is HSQC of DHPZ-M and (d) is HSQC of DHPZ-Ph.

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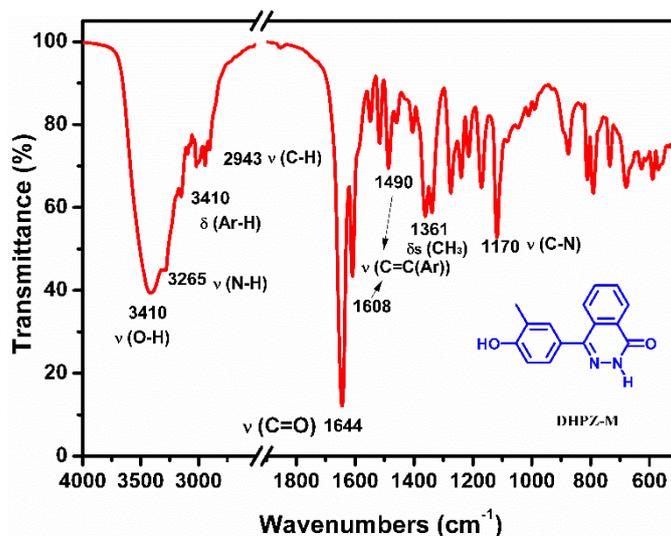
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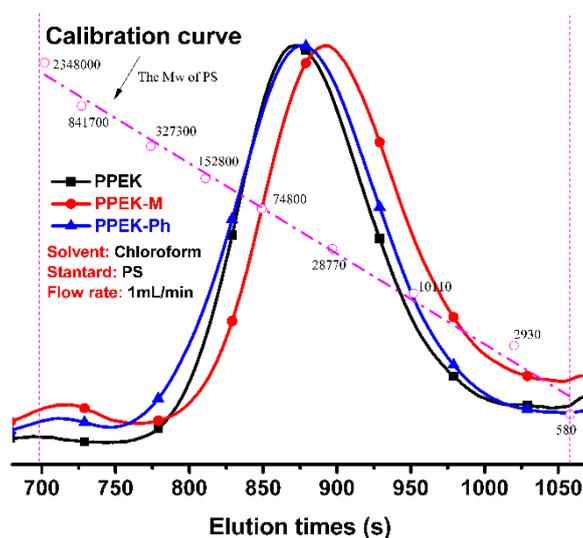
51 **Figure S3.** The HRMs spectrum of DHPZ-M and DHPZ-Ph: (a) is DHPZ-M and (b) is DHPZ-Ph.



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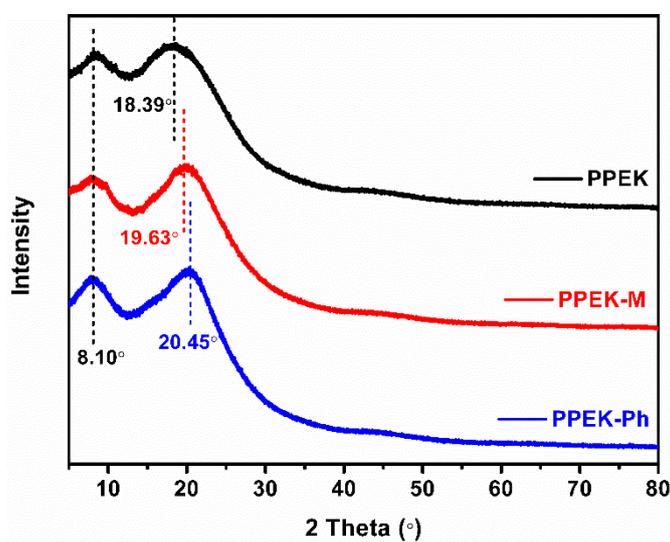
Figure S4. FTIR pattern of the DHPZ-M



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Figure S5. The GPC traces of PPEK, PPEK-M and PPEK-Ph.



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Figure S6. The WAXD patterns of PPEKs resins.

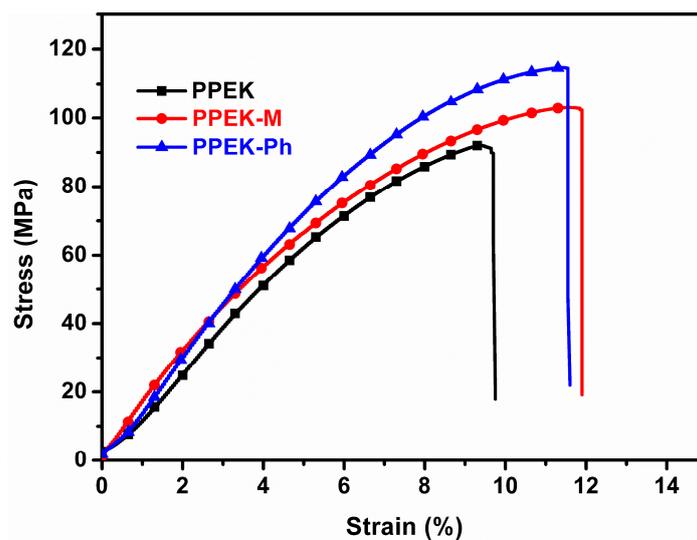


Figure S7. The stress-strain curves of the resin (PPEK, PPEK-M and PPEK-Ph).

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