

## Supplementary Information

### **Durable Polymeric N-halamine Functionalized Stainless Steel Surface for Improved Antibacterial and Anti-biofilm Activity**

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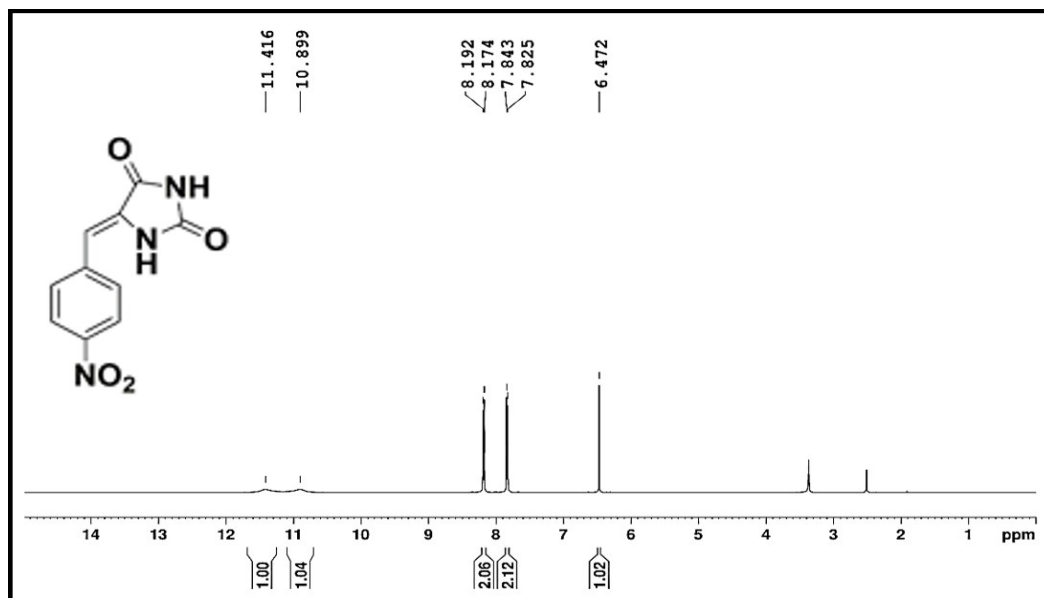


Figure S1 <sup>1</sup>H NMR of NBID

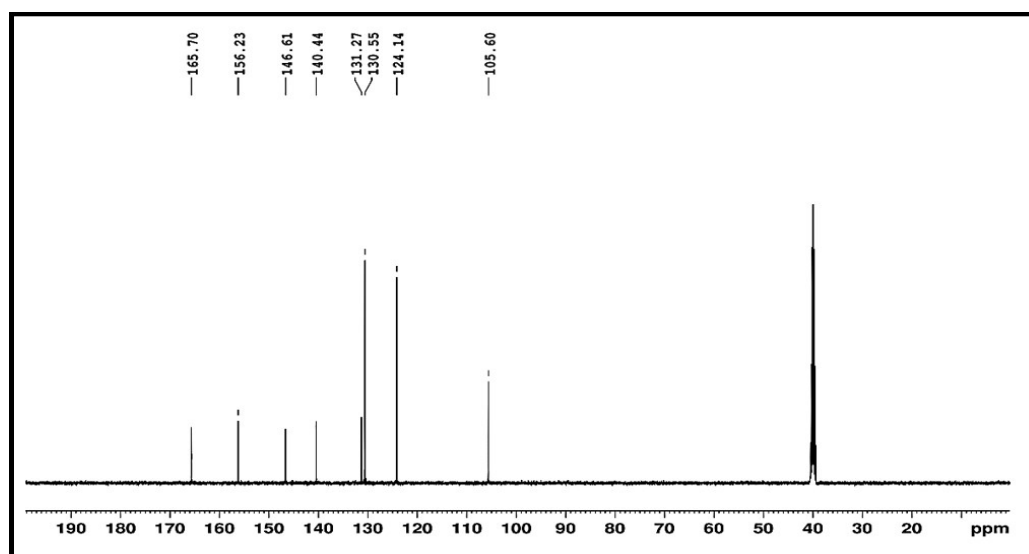


Figure S2. <sup>13</sup>C NMR of NBID

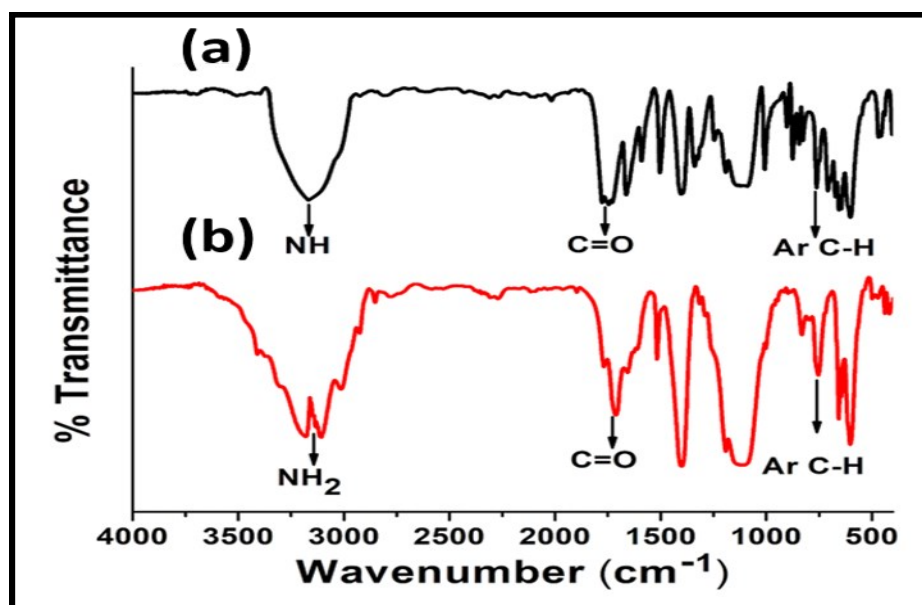


Figure S3. FTIR spectrum of NBID (a) and ABID (b)

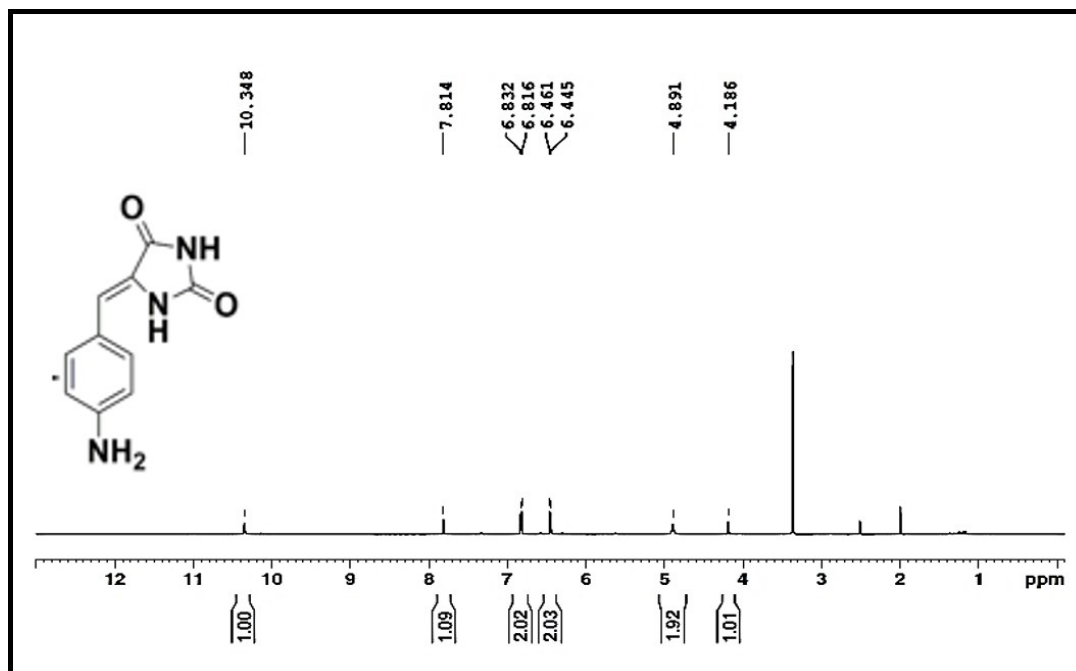


Figure S4. <sup>1</sup>H NMR of ABID

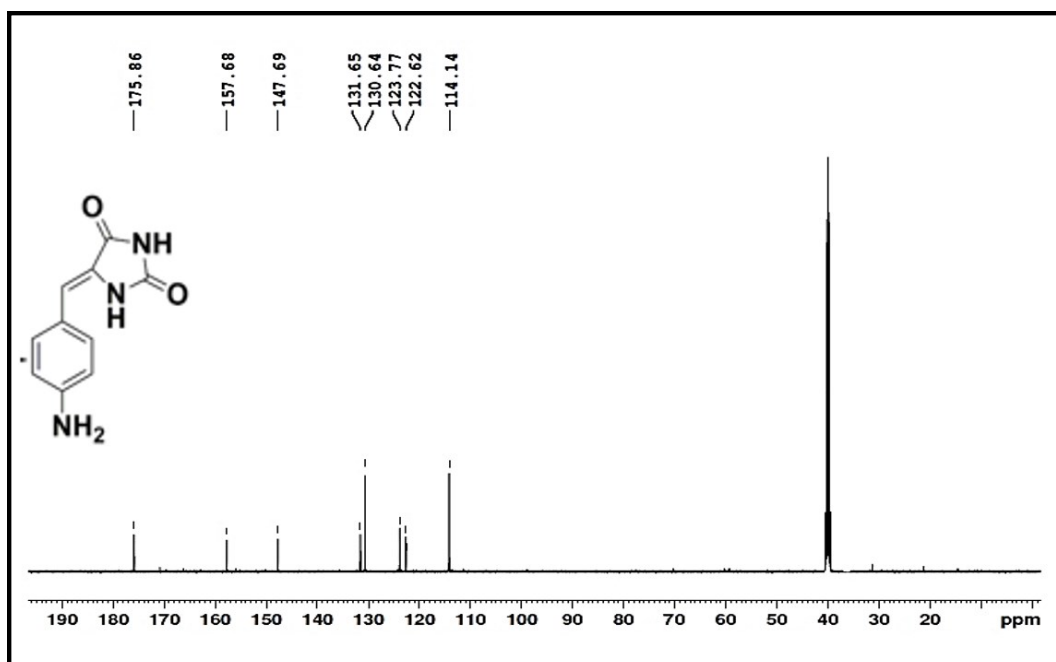


Figure S5. <sup>13</sup>C NMR of ABID

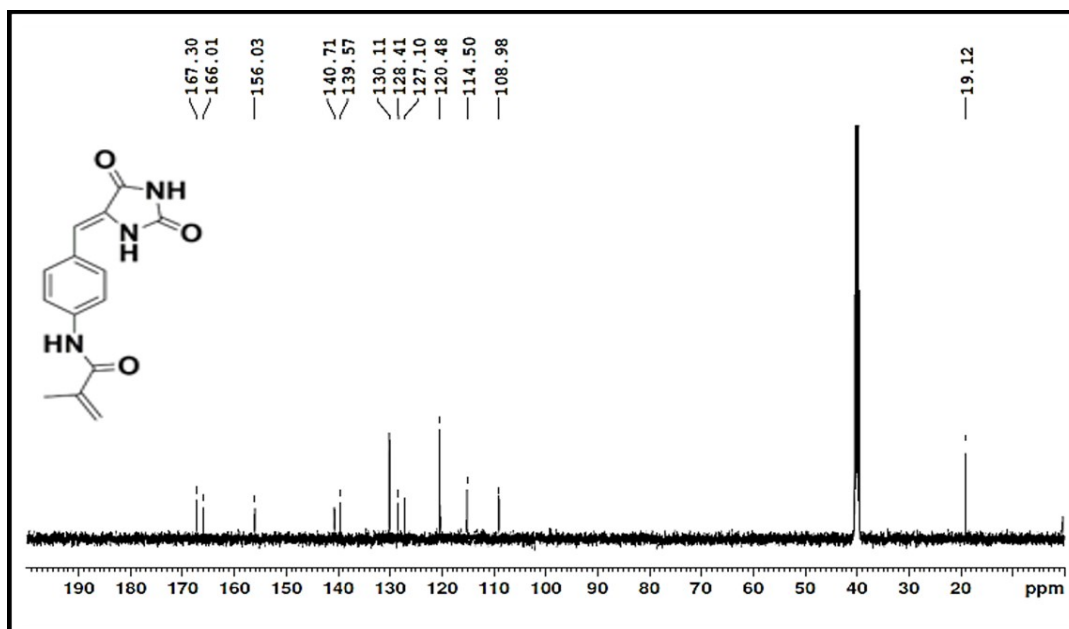
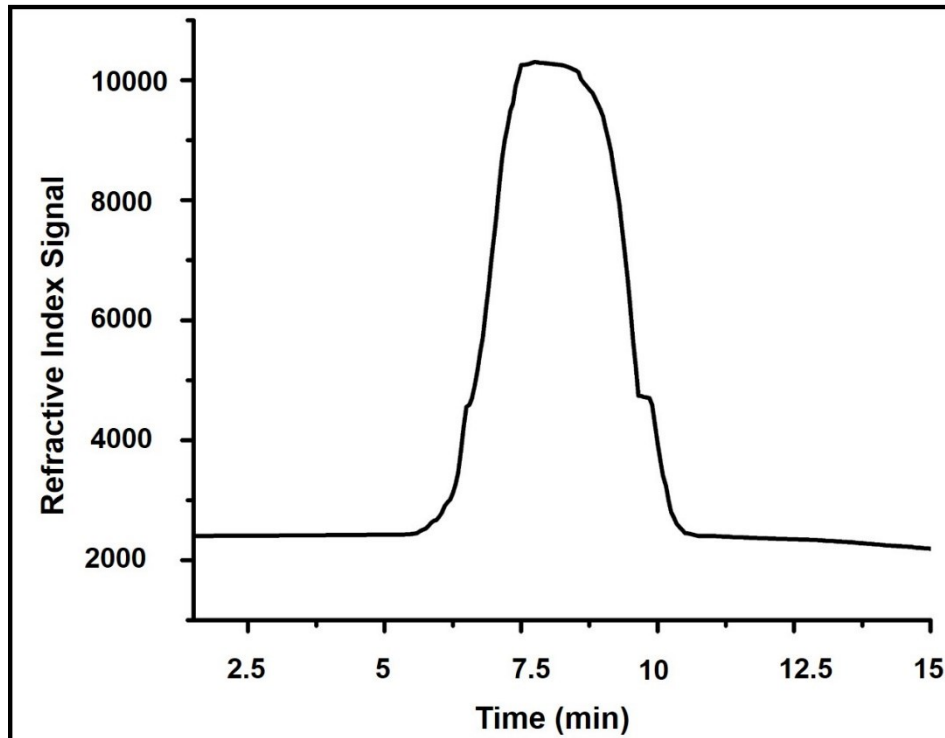
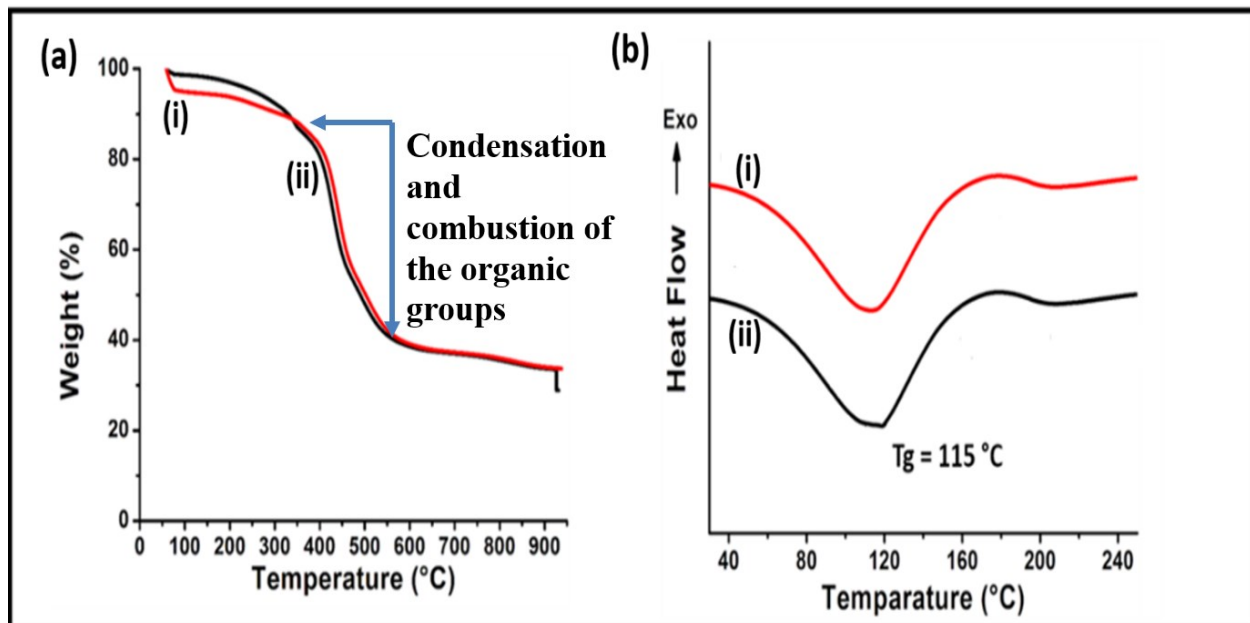


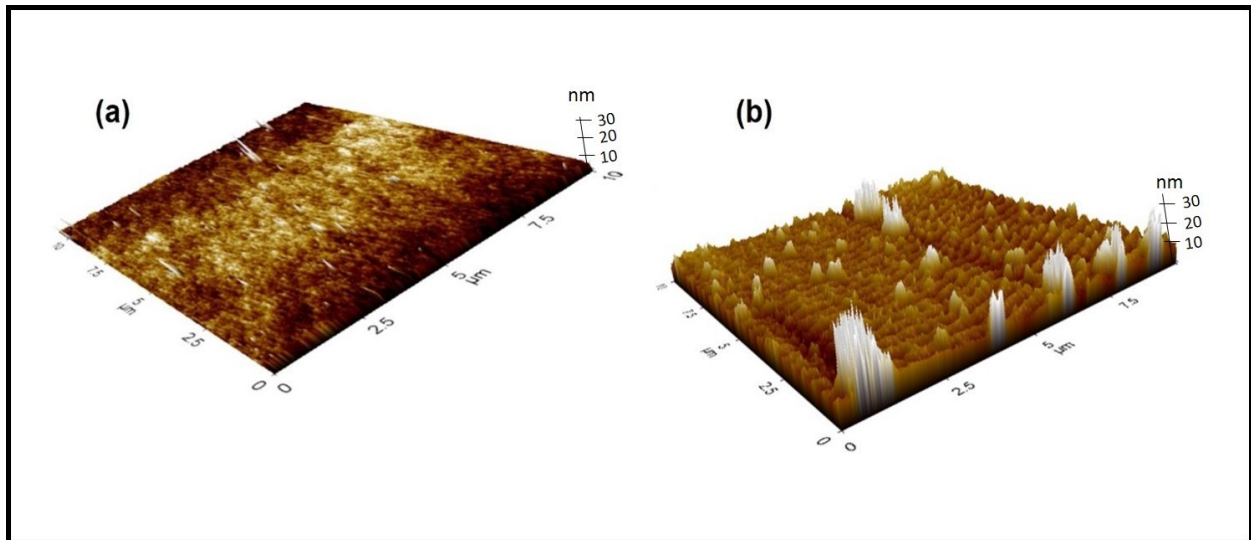
Figure S6. <sup>13</sup>C NMR of DMPM



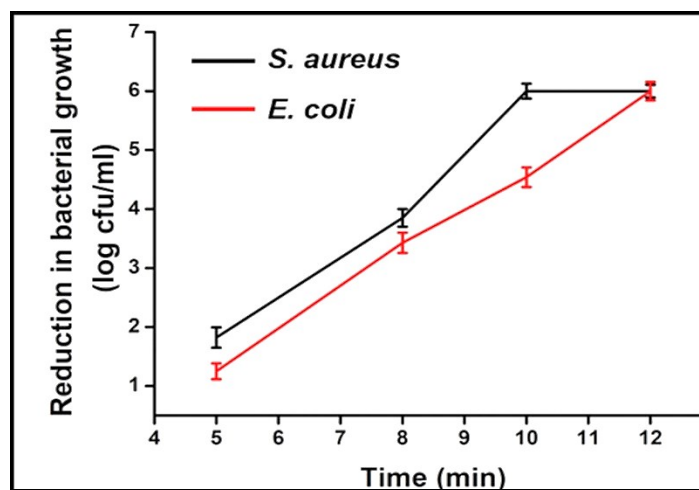
**Figure S7:** Gel permeation chromatogram of poly(DMPM-co-MPTS)



**Figure S8.** Thermal analysis of polymer. (a) TGA of pristine poly(MPTS) (i) and (ii) and (b) DSC of poly(MPTS) (i) and poly(DMPM-co-MPTS) (ii).



**Figure S9.** Atomic force micrograph of stainless steel surface, control (a) and modified surface (b)



**Figure 10.** Antibacterial activity of SS surface modified with chlorinated polymer containing 15 mol% of hydantoin monomer.

**Table S1. Elemental analysis of polymers using CHNSO analyzer and iodometric titration**

<b>Sample</b>	<b>Mole % of DMPM in Polymers</b>	<b>C (%)<sup>a</sup></b>	<b>H (%)<sup>a</sup></b>	<b>N (%)<sup>a</sup></b>	<b>Cl (%)<sup>b</sup></b>
PMPTS	0%	56.64	8.12	0	0
P(DMPM- <i>co</i> -MPTS)	5%	57.61	6.98	0.96	0.95 ± 0.03
	10%	55.87	7.35	1.7	1.50 ± 0.04

<sup>a</sup>Obtained from CHNSO analyzer, <sup>b</sup>Obtained from iodometric titration