**Supplementary Information**

**Figure S1**

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| **(a)Chart, histogram  Description automatically generated** |
| **(b)**Chart, histogram  Description automatically generated |
| **(c)**Chart, histogram  Description automatically generated |

Figure S1 Size distribution of EFBA at different concentration (a) 0.05 wt%, (b) 0.1 wt% and (c) 0.2 wt%

**Figure S2**

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| **(a)Chart, line chart  Description automatically generated** |
| **(b)**Chart, line chart  Description automatically generated |
| **(c)Chart, line chart  Description automatically generated** |

Figure S2 Size distribution of EFBSNP at different concentration (a) 0.05 wt%, (b) 0.1 wt% and (c) 0.2 wt%

**Figure S3**

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| **(a)Chart, line chart  Description automatically generated** |
| **(b)**Chart, line chart  Description automatically generated |
| **(c)**Chart  Description automatically generated |

Figure S3 Zeta potential of EFBA at different concentration (a) 0.05 wt%, (b) 0.1 wt% and (c) 0.2 wt%

**Figure S4**

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| **(a)Chart, line chart  Description automatically generated** |
| **(b)**Chart, line chart  Description automatically generated |
| **(c)**Chart, line chart  Description automatically generated |

Figure S4 Zeta potential of EFBSNP at different concentration (a) 0.05 wt%, (b) 0.1 wt% and (c) 0.2 wt%