Fig. S1. Quantitative $^{13}$C NMR spectra of MWL and DES lignins.
Fig. S2. Quantitative $^{31}$P NMR spectra of MWL and regenerated lignins.
Fig. S3. The content of phenolic-OH and its corresponding digital photo of these DES lignin nanospheres.

Fig. S4. Photographs of Baby Bok Choy after feeding Mythimna separata at different times.