

## Supporting Information

### Coating Novozyme435 with ionic liquid: more than just coating for efficient ring-opening polymerization of $\delta$ -valerolactone

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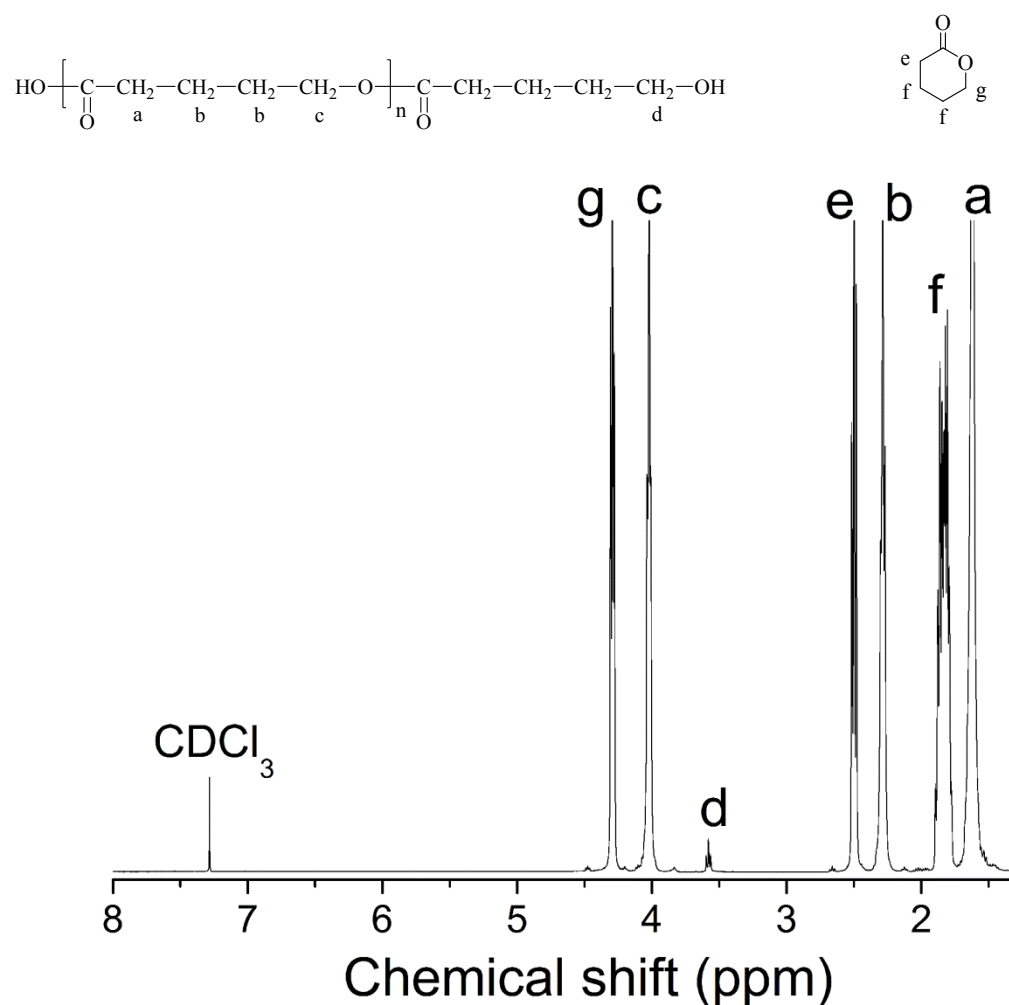
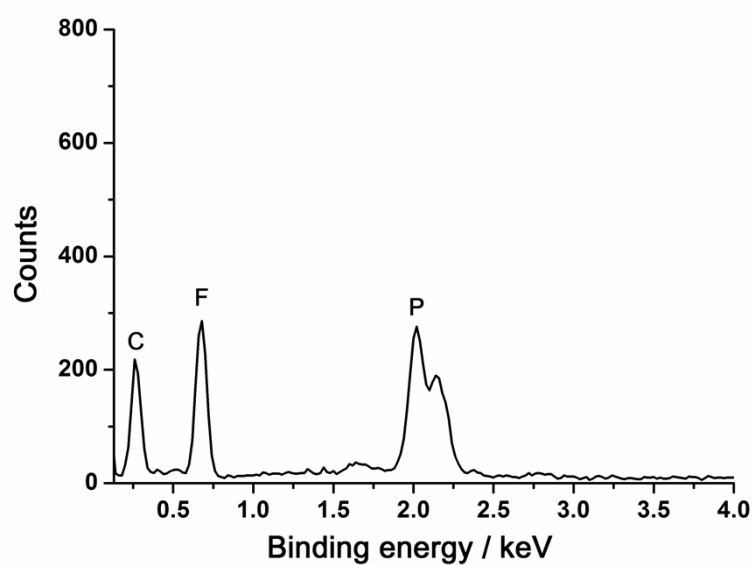
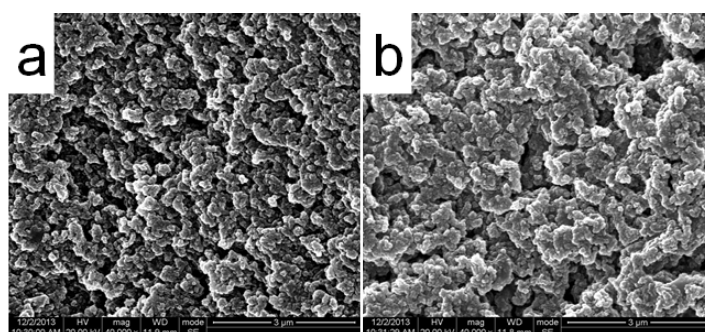


Figure S1.  $^1\text{H-NMR}$  spectra of crude PVL in  $\text{CDCl}_3$



**Figure S2.**EDX spectra of Novozyme435 after treatment with [Omim][PF<sub>6</sub>]



**Figure S3.** SEM images of Novozyme435 (a) and ILCE (b) after ROP reaction

**Table S1.**Recovery rate of Novozyme435 and [Omim][PF<sub>6</sub>] coated-Novozyme435 after ROP reaction

Reaction Run	Novozyme43	[Omim][PF <sub>6</sub> ] coated-Novozyme435
1	93.0%	98.0%
2	83.9%	87.9%