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# Supplementary Materials: On the Effect of Microwave energy on Lipase-Catalyzed Polycondensation Reactions

Alessandro Pellis, Georg M. Guebitz and Thomas J. Farmer

**Table S1.** Solvent-free reactions catalyzed by Novozym 435<sup>®</sup> after 4 h of reaction.

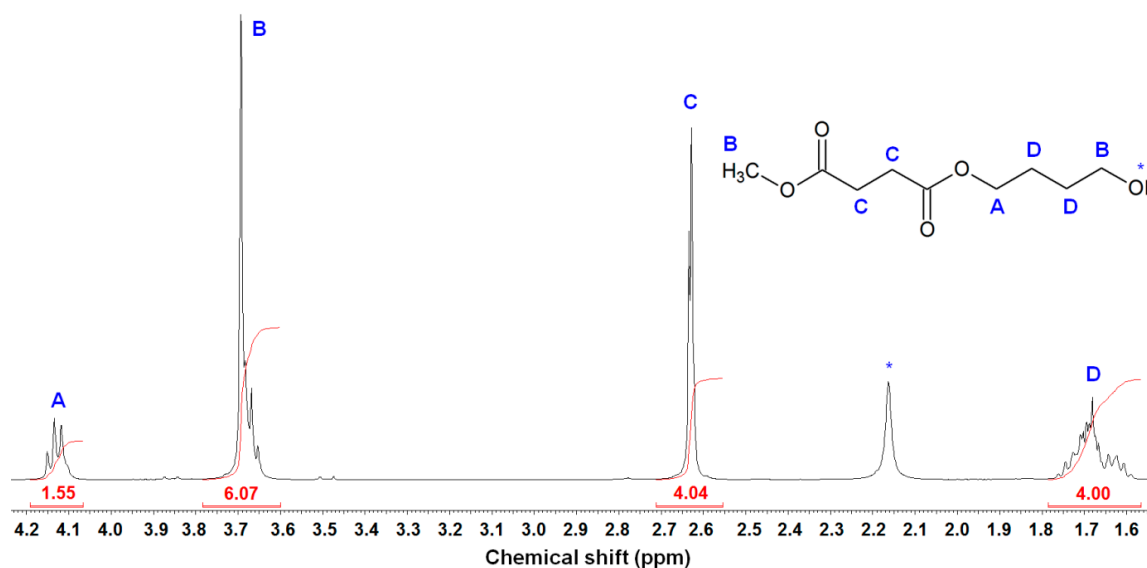
Entry (n°)	Diester (A)	Diol (B)	Heating		T (°C)	Vessel Open/Close	Conversion (%) *	M <sub>w</sub> (Da) <sup>λ</sup>	M <sub>n</sub> (Da) <sup>λ</sup>	PDI <sup>λ</sup>
			MW	Oil Bath						
Blank	DMA	BDO	+		50	Open	-	-	-	-
Blank	DMA	BDO		+	50	Close	-	-	-	-
2	DMA	BDO	+		50	Close	39	509	483	1.054
2	DMA	BDO		+	50	Close	40	515	488	1.055
4	DMS	BDO	+		50	Open	44	546	456	1.197
4	DMS	BDO		+	50	Open	47	599	528	1.134
7	DMS	BDO	+		50	Open	11	391	335	1.167
7	DMS	BDO		+	50	Open	46	611	543	1.125

\* Calculated via <sup>1</sup>H-NMR spectra; <sup>λ</sup> Calculated via GPC. Abbreviations: DMA: dimethyl adipate; DMS: dimethyl succinate; BDO: 1,4-butanediol.

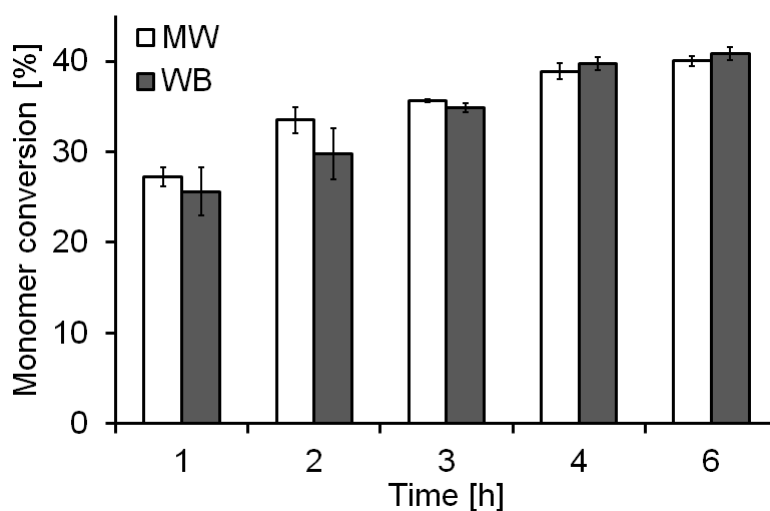
**Table S2.** Reactions in organic media catalyzed by Novozym 435<sup>®</sup> after 4 h of reaction.

Entry (n°)	Diester (A)	Diol (B)	Heating		T (°C)	Conversion (%) *	M <sub>w</sub> (Da) <sup>λ</sup>	M <sub>n</sub> (Da) <sup>λ</sup>	PDI <sup>λ</sup>
			MW	Oil Bath					
Blank	DMS	BDO	+		38	-	-	-	-
Blank	DMS	BDO		+	38	-	-	-	-
9	DMS	BDO	+		30	39	373	330	1.130
9	DMS	BDO		+	30	38	303	287	1.056
11	DMS	BDO	+		38	45	480	399	1.203
11	DMS	BDO		+	38	46	479	391	1.225
13	DMS	BDO	+		38	47	553	514	1.076
13	DMS	BDO		+	38	48	530	505	1.050

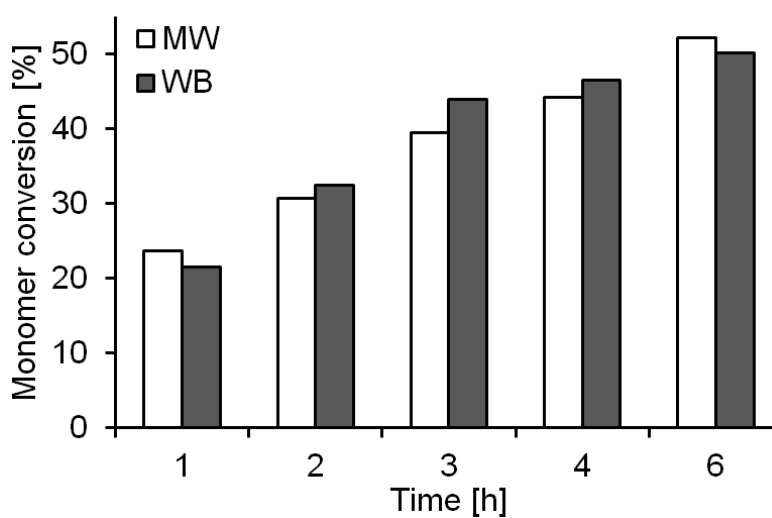
\* Calculated via <sup>1</sup>H-NMR spectra; <sup>λ</sup> Calculated via GPC. Abbreviations: DMA: dimethyl adipate; DMS: dimethyl succinate; BDO: 1,4-butanediol.



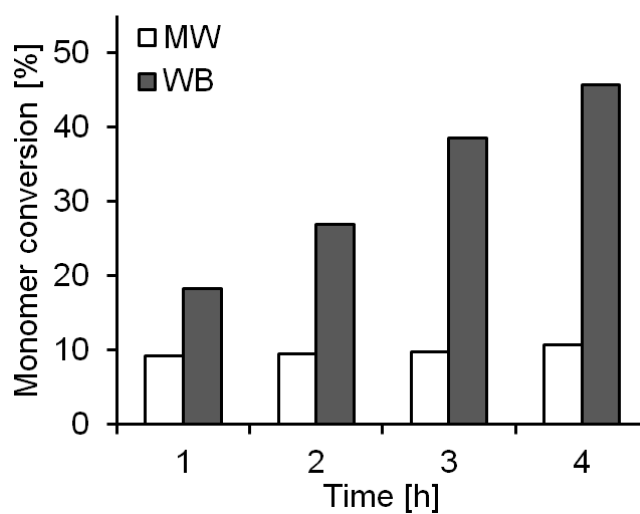
**Figure S1.** <sup>1</sup>H-NMR spectrum of the polycondensation products of DMS with BDO catalyzed by 10% w/w Novozym<sup>®</sup> 435 at 4 h. Entry 2 Table 1 and Table S1.



**Figure S2.** Time-course monitoring of the monomers conversion via  $^1\text{H-NMR}$  spectra of the bulk reaction performed in a closed vessel at 50 °C without using the Power Max function.



**Figure S3.** Time-course monitoring of the monomers conversion via  $^1\text{H-NMR}$  spectra of the bulk reaction performed in an open vessel at 50 °C without using the Power Max function.



**Figure S4.** Time-course monitoring of the monomers conversion via  $^1\text{H-NMR}$  spectra of the bulk reaction performed in an open vessel at 50 °C using the Power Max function.