

CO₂ Activation throughout C-N, C-O and C-C Bond Formation

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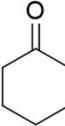
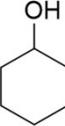
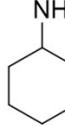
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Electronic Supporting Information

	A.	B.	C.
	 ($\subset \text{C}=\text{O}$)	 ($\subset \text{CH-OH}$)	 ($\subset \text{CH-NH}_2$)
Physical appearance	Colorless liquid	Colorless, viscous liquid	Clear to yellowish liquid
Density (g/mL)	0.9478	0.9624	0.8647
Boiling point (°C)	155.6	161.8	134.5
pK_a	n.a.	16	10.64

Scheme S1. The chemical structure and the corresponding physical properties of: A. cyclohexanone ($\subset \text{C}=\text{O}$), B. cyclohexanol ($\subset \text{CH-OH}$) and C. cyclohexylamine ($\subset \text{CH-NH}_2$).

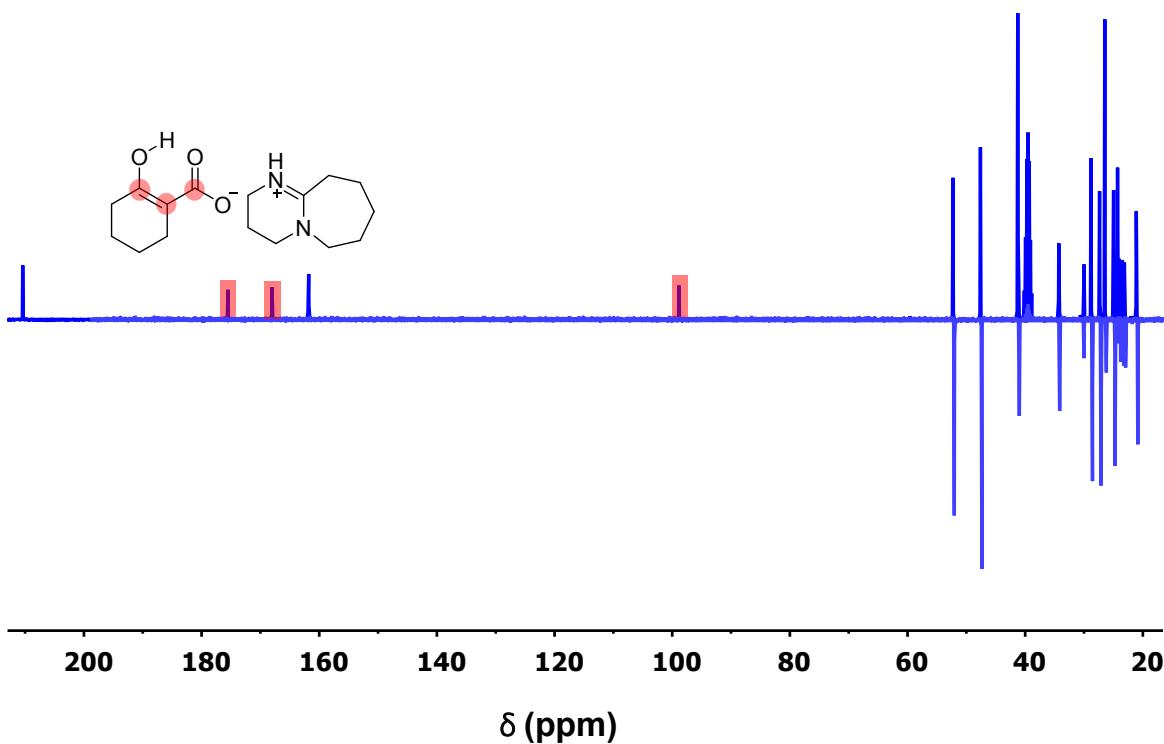


Figure S1. DEPT-135 spectrum of $\subset \text{C}=\text{O}/\text{DBU}$ mixture after bubbling CO₂. The peaks labeled in red designate the enol and carboxylate carbons.

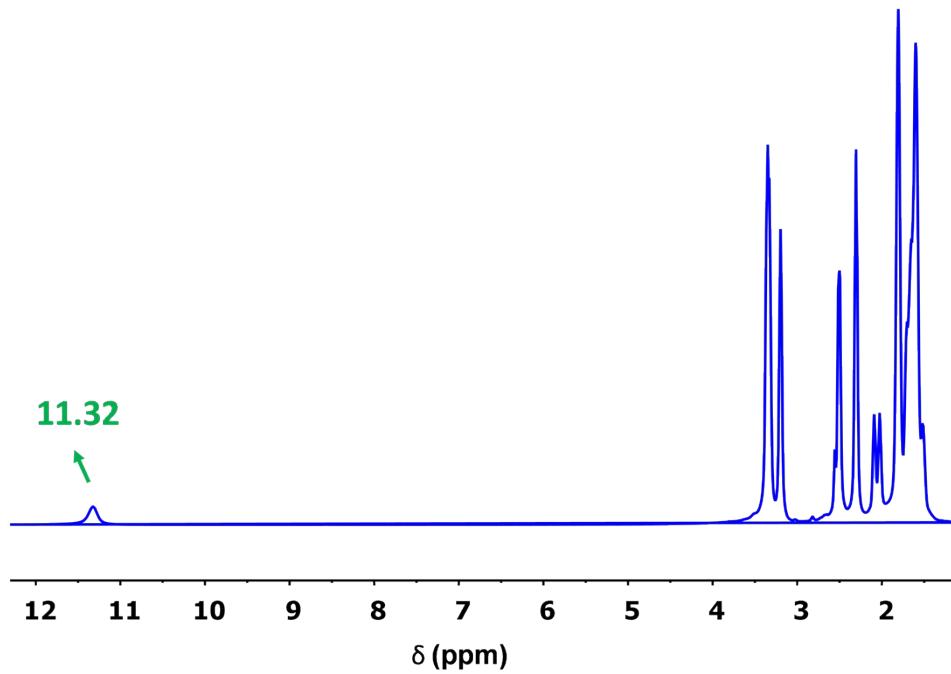


Figure S2. ${}^1\text{H}$ NMR spectrum of $\text{C=O}/\text{DBU}$ mixture after bubbling CO_2 .

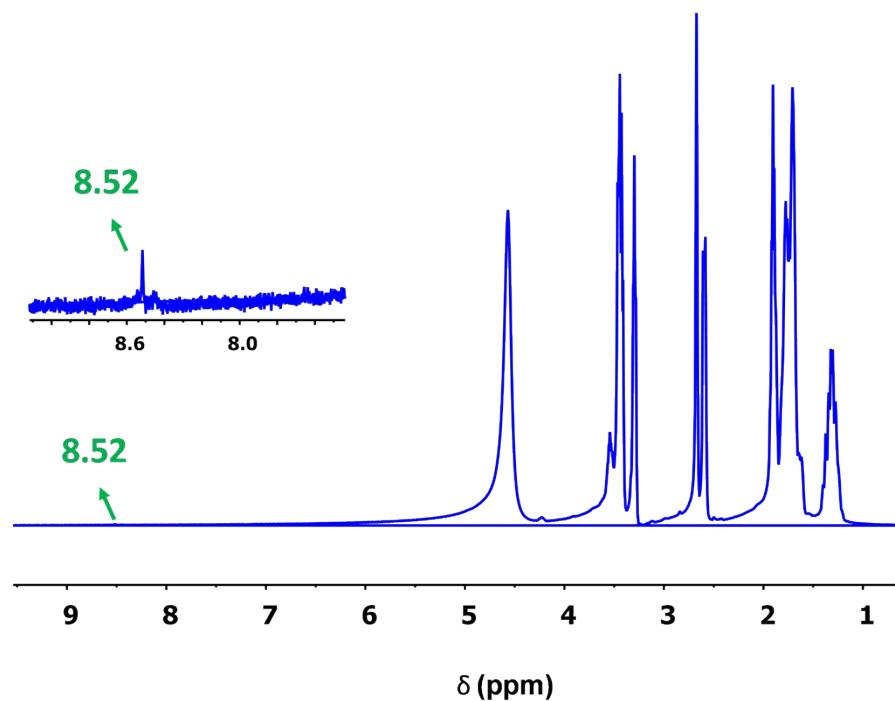


Figure S3. ${}^1\text{H}$ NMR spectrum of $\text{CH-OH}/\text{DBU}$ mixture after bubbling CO_2 .

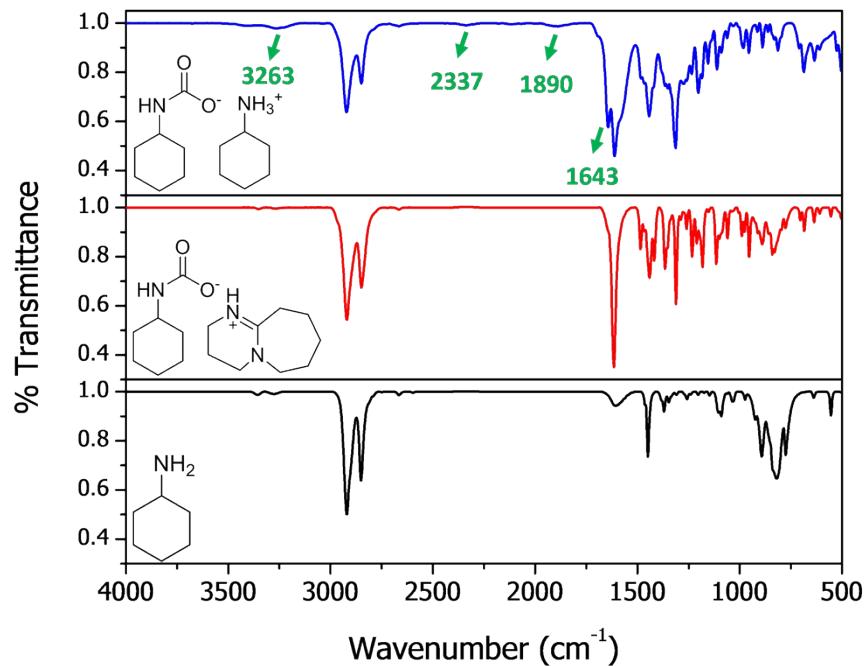


Figure S4. The ATR-FTIR spectra of $\subset \text{CH}-\text{NH}_2$ (black), $\subset \text{CH}-\text{NH}_2$ /DBU before (red) and after (blue) bubbling CO_2

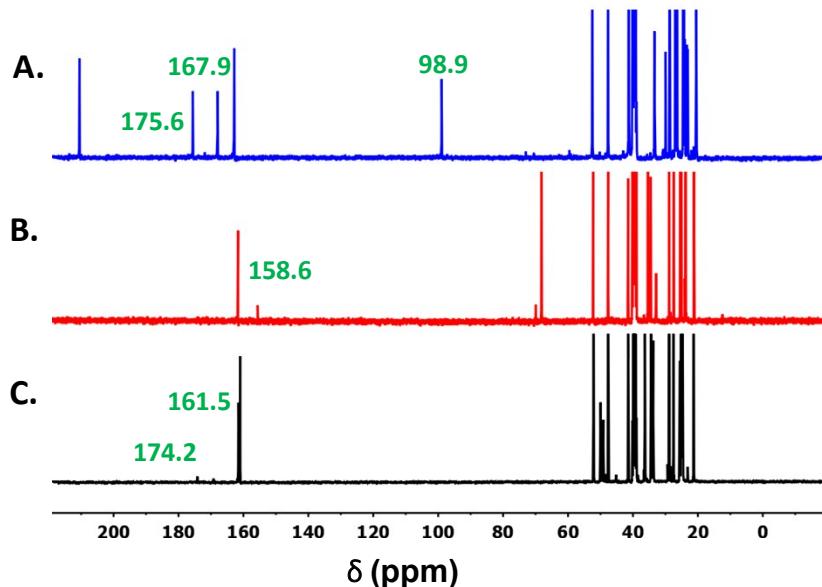


Figure S5. ^{13}C NMR spectra of $\text{DMSO-}d_6$ solutions of: **A.** $\subset \text{C=O}/\text{DBU}$, **B.** $\subset \text{CH-OH}/\text{DBU}$ and **C.** $\subset \text{CH-NH}_2/\text{DBU}$ after bubbling CO_2 .

Table S1. CHN results of [$\text{C} \text{--} \text{CH-NH-C(=O)O}$] $[\text{C} \text{--} \text{CH-NH}_3]^+$ obtained from EA.

Element	% Expected	% Found
C	64.43	63.04
H	10.81	9.77
N	11.56	11.11