

ECO-FRIENDLY SYNTHESIS OF HIGH-QUALITY POLYANILINE USING A COPPER(II) SCORPIONATE CATALYST

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Supplementary material

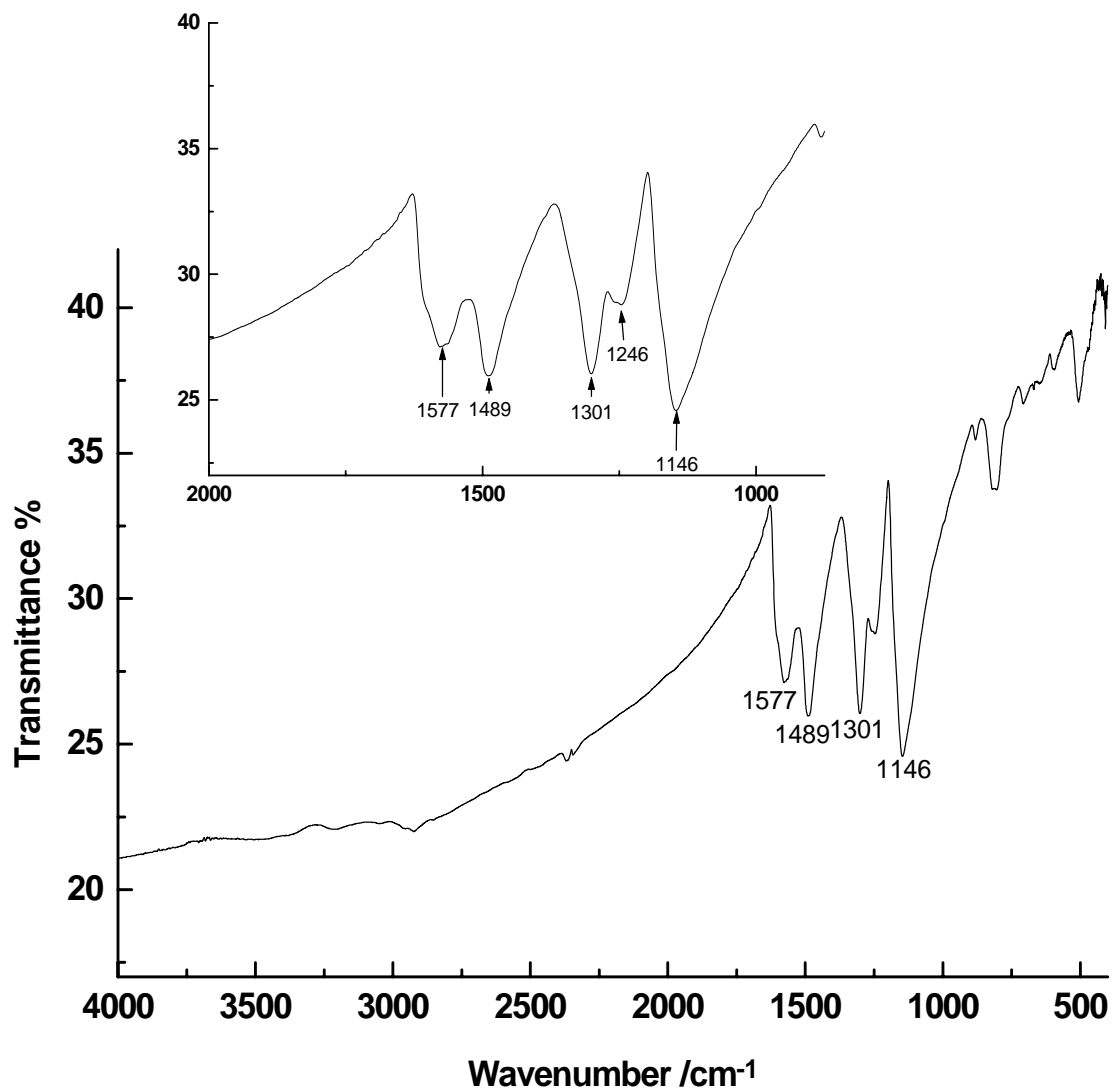


Figure S1. The FT-IR spectrum (KBr pellet) of polyaniline sample prepared using [MeB(3-(Mes)Pz)₃]CuCl catalyst in acetonitrile.

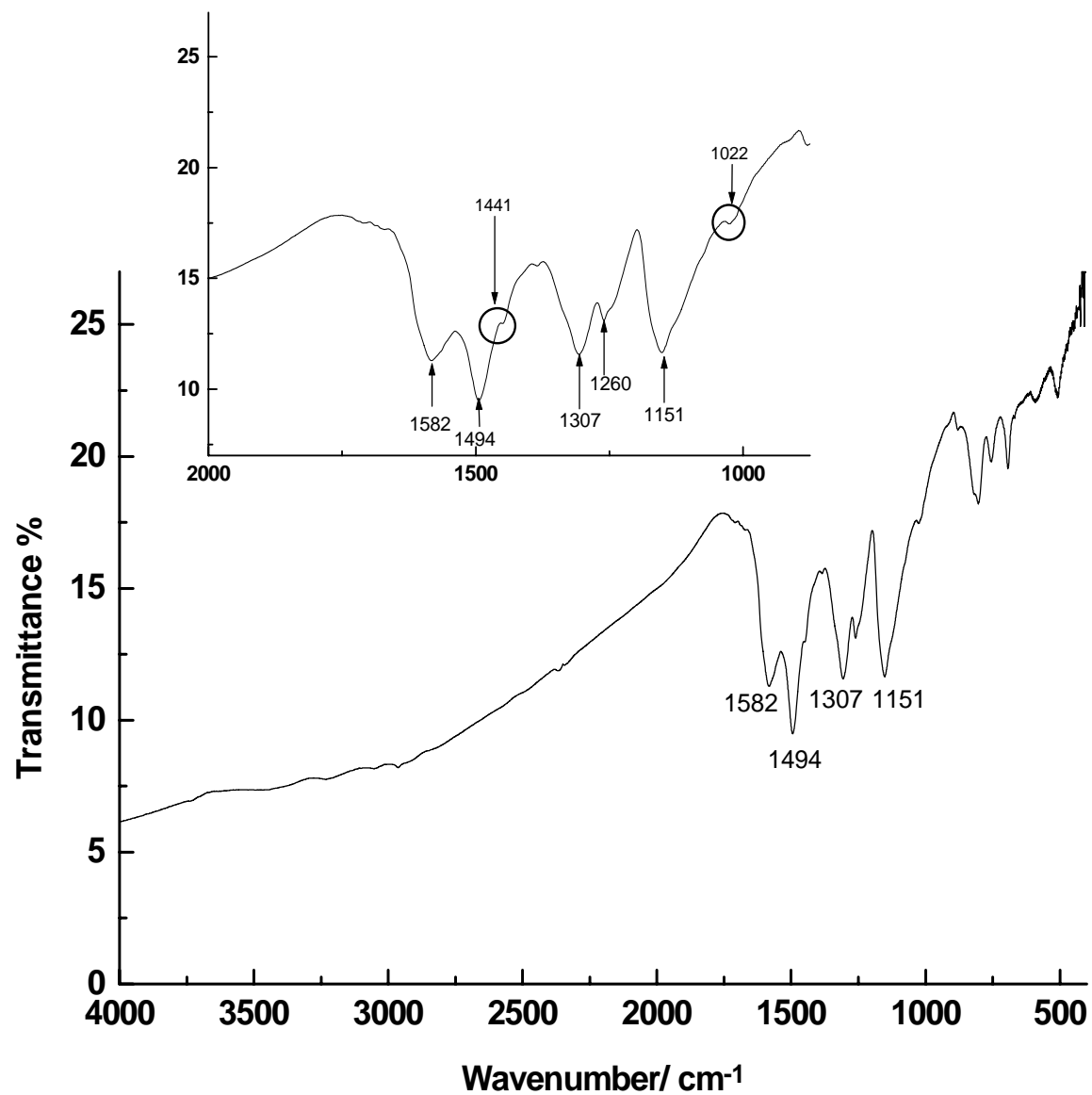


Figure S2. The FT-IR spectrum (KBr pellet) of polyaniline sample prepared using $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ in 1:1 acetonitrile:water

Table S1. Selected analytical data on PANI obtained using aniline or aniline dimer (*N*-(4-aminophenyl)aniline) under different conditions (ACN = acetonitrile)

C atalyst	Reaction time (h)	Starting Material	Mol e ratio of monomer:catalyst:H ₂ O ₂ :HCl	Reaction medium	Dry weight of as-prepared sample (g)	Conductivity S/cm ⁻¹ As-prepared sample	Conductivity S/cm ⁻¹ After doping
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline	1:0.02:1.5:1	ACN	0.750	1.240	4.466
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline	1:0.02:1.5:1	ACN:H ₂ O 1:1	0.357	0.0064	0.0520
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline	1:0.02:1.5:1	H ₂ O	0.112	0.00012	0.0003
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline	1:0.02:1.5:0	ACN	0.094	Non-conduct.	Non-conduct.
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline dimer	1:0.02:1.5:1	ACN	1.830	0.00053	0.0021
[MeB(3-(Mes)Pz) ₃]CuCl	48	aniline dimer	1:0.02:1.5:2	ACN	1.650	0.00885	0.0097
CuCl ₂ •2H ₂ O	48	aniline	1:0.02:1.5:1	ACN:H ₂ O 1:1	0.291	0.00026	0.0032
CuCl ₂ •2H ₂ O	24	aniline dimer	1:0.02:1.5:1	ACN:H ₂ O 1:1			0.00004
Without catalyst	48	aniline	1:0:1.5:1	ACN:H ₂ O 1:1	0.025		
[MeB(3-(Mes)Pz) ₃]CuCl	24	aniline dimer	1:0.05:1.5:1	ACN:H ₂ O 1:1	0.500		3.4 × 10 ⁻⁴
[MeB(3-(Mes)Pz) ₃]CuCl	24	aniline dimer	1:0.05:1.5:0	ACN:H ₂ O 1:1	0.150		4 × 10 ⁻⁶