Supporting Information

Intrinsic catalytic activity of Bronsted Acid Ionic Liquids for Synthesis of Triphenyl Methane and Phthalein under Microwave

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1. General Information
2. Typical Procedure
3. Spectral Data
4. $^1$H NMR, $^{13}$C NMR Spectra and Mass Spectra

1. General Information

All chemicals were commercially available and used without further purification. $^1$H NMR and $^{13}$C NMR spectra were obtained on a Varian Mercury plus 300 MHz NMR Spectrometer Chemical shift values are expressed in $\delta$ units relative to tetramethylsilane (TMS) signal as internal reference CDCl$_3$. Data are reported as follows: chemical shift in ppm ($\delta$), multiplicity (s = singlet, d = doublet, t = triplet, br = broad singlet, m = multiplet), coupling constant $J$ (Hz).
Spectral data

$^1$H NMR & $^{13}$C NMR Spectra

4,4’-(phenylmethylene)bis(N,N-dimethylaniline) 3a
**H NMR & $^{13}$C NMR Spectra**

4,4'-((cyclohexylphenylmethylene)bis(N,N-dimethyleaniline) 3c

![H NMR spectrum](image1)

![C NMR spectrum](image2)
$^1$H NMR & $^{13}$C NMR Spectra

4,4'-((3-methylbutane-1,1-diyl)bis(N,Ndimethylaniline))
4,4'-((propane-1,1-diyl)bis(N,N-dimethyleaniline) 3e

\[ \text{Diagram showing NMR spectra for 4,4'-((propane-1,1-diyl)bis(N,N-dimethyleaniline) 3e} \]
(E)-4,4'-(3-phenylprop-2-ene-1,1-diyl)bis(N,N-dimethylaniline)3f
H¹- NMR Spectrum

2',7'-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6f
C\textsuperscript{13}- NMR Spectrum

2',7'-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6f
H¹- NMR Spectrum

5-amino-2',7'-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6g
C$^{13}$- NMR Spectrum

5-amino-2',7''-bis(1H-benzo[d]imidazol-2-yl)-3',6''-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6g
C\textsuperscript{13}- NMR Spectrum

2',7''-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-3-oxo-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthene]-5-carboxylic acid 6h
Mass spectrum 6f

2',7'-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6f
Mass spectrum 6g

5-amino-2',7'-'bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthen]-3-one 6g
Mass spectrum 6h

2',7'-bis(1H-benzo[d]imidazol-2-yl)-3',6'-dihydroxy-3-oxo-4a',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthene]-5-carboxylic acid 6h