Electronic Supplementary Information

Photoswitching studies of new photochromic ionic liquids studied at real time by *in situ* irradiation

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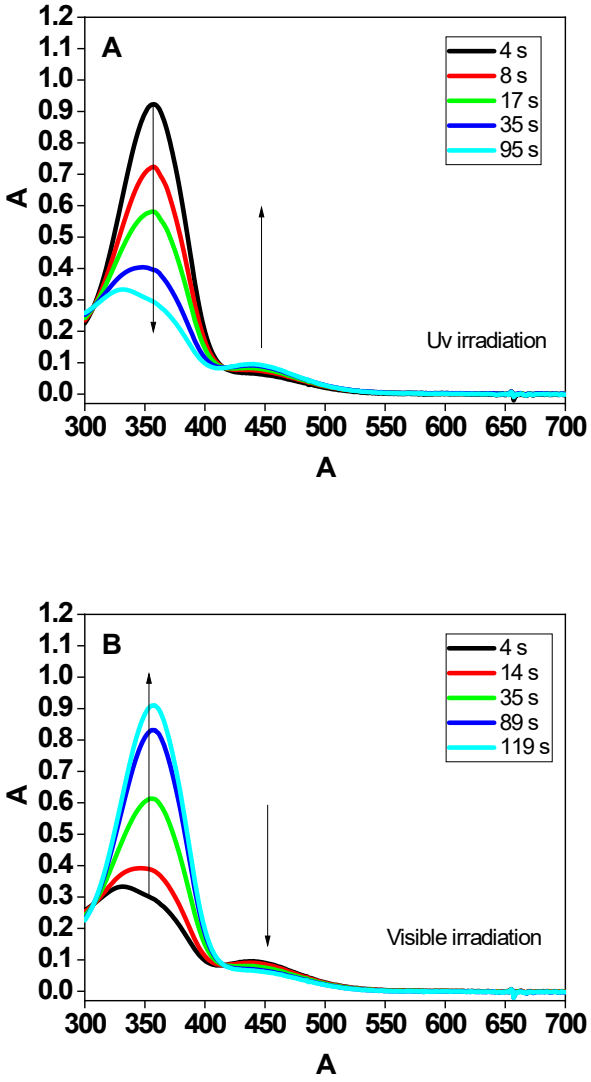


Figure S1. Photoisomerization *cis-trans* of $\mathbf{AZO_{pyr}}$ followed by change on absorbance in and MeOH (A and B). [$\mathbf{AZO_{pyr}}$] in MeOH 6.94×10^{-5} M.

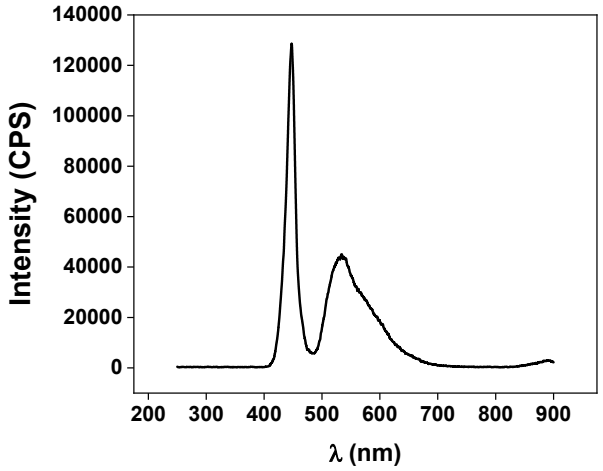
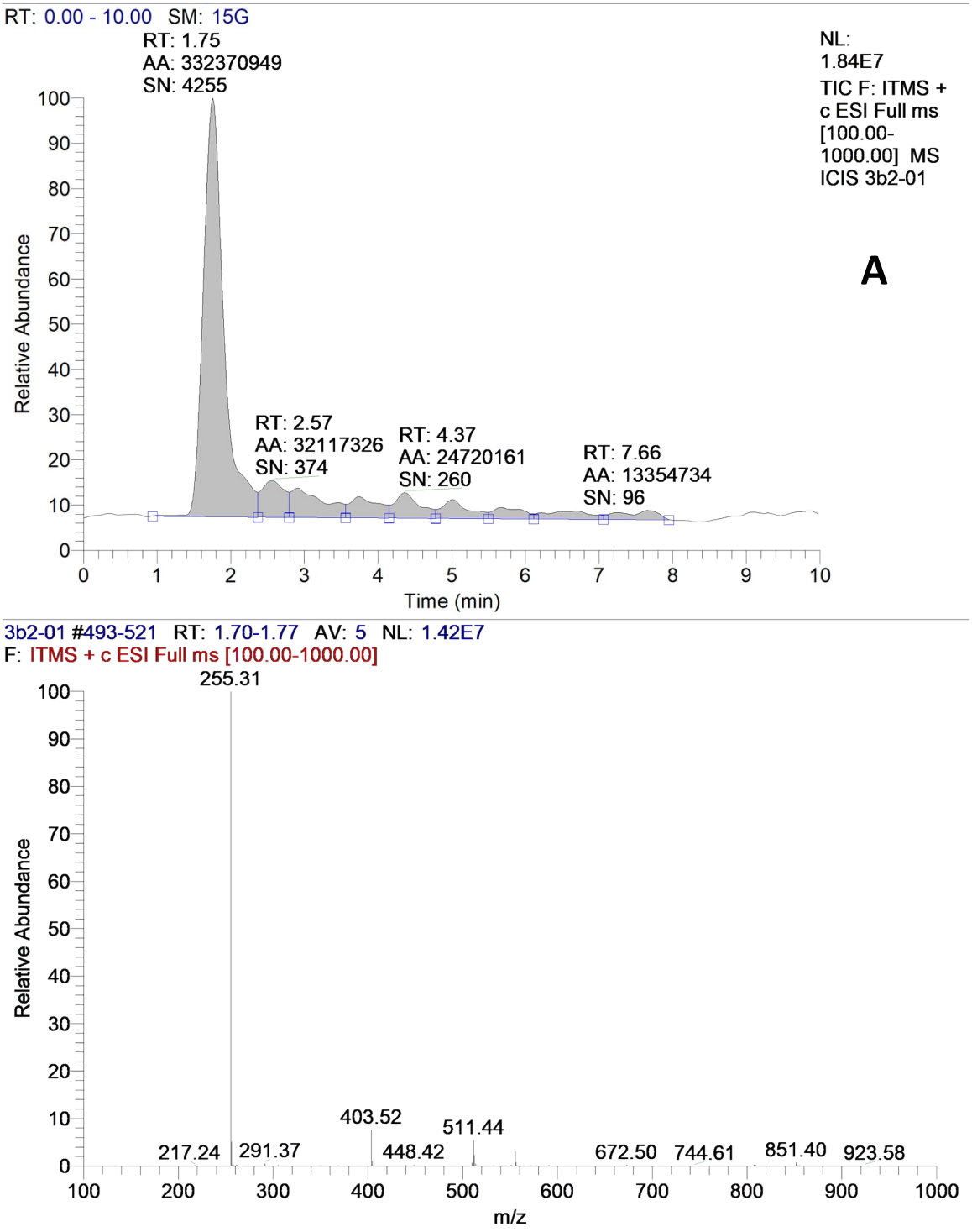


Figure S2. Spectra of visible flash dual LED light of ZTE V6 cellphone used as source of light for irradiation experiments.


c:\xcalibur\...\10112017\3b2-01
11/10/2017 18:12:35
RT: 0.00 - 10.00 SM: 15G
RT: 1.75
AA: 332370949
SN: 4255
NL:
1.84E7
TIC F: ITMS +
c ESI Full ms
[100.00-
1000.00] MS
ICIS 3b2-01
A
RT: 2.57
AA: 32117326
SN: 374
RT: 4.37
AA: 24720161
SN: 260
RT: 7.66
AA: 13354734
SN: 96
Relative Abundance
Time (min)
3b2-01 #493-521 RT: 1.70-1.77 AV: 5 NL: 1.42E7
F: ITMS + c ESI Full ms [100.00-1000.00]
255.31
403.52
511.44
217.24
291.37
448.42
672.50
744.61
851.40
923.58
Relative Abundance
m/z

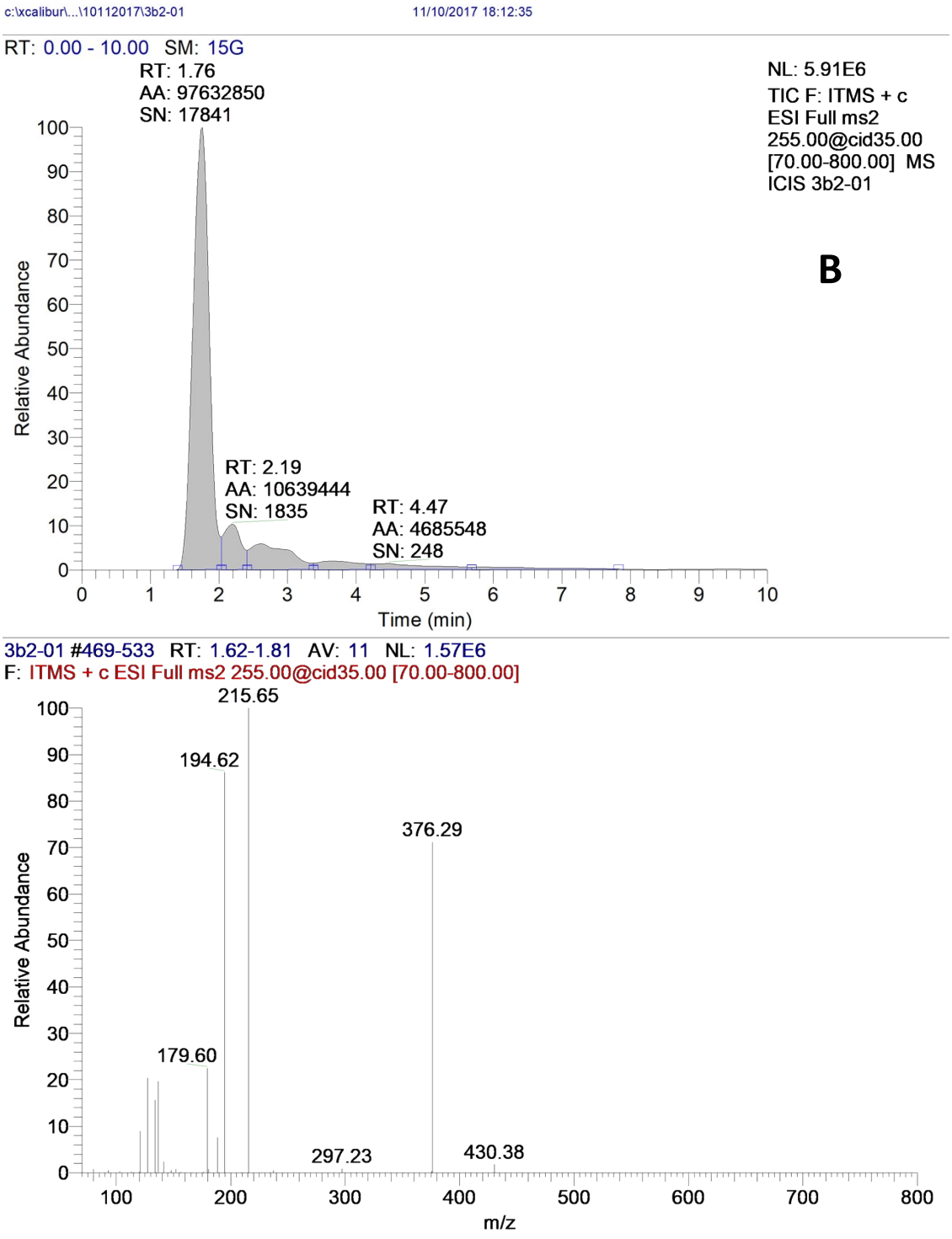
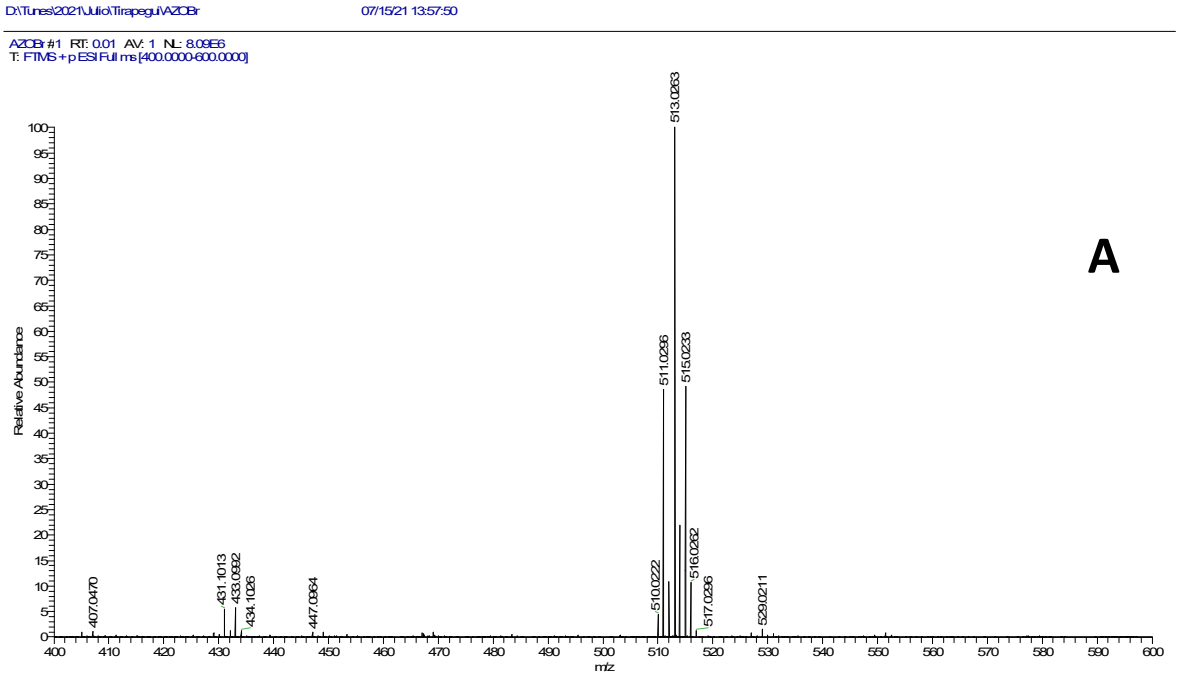


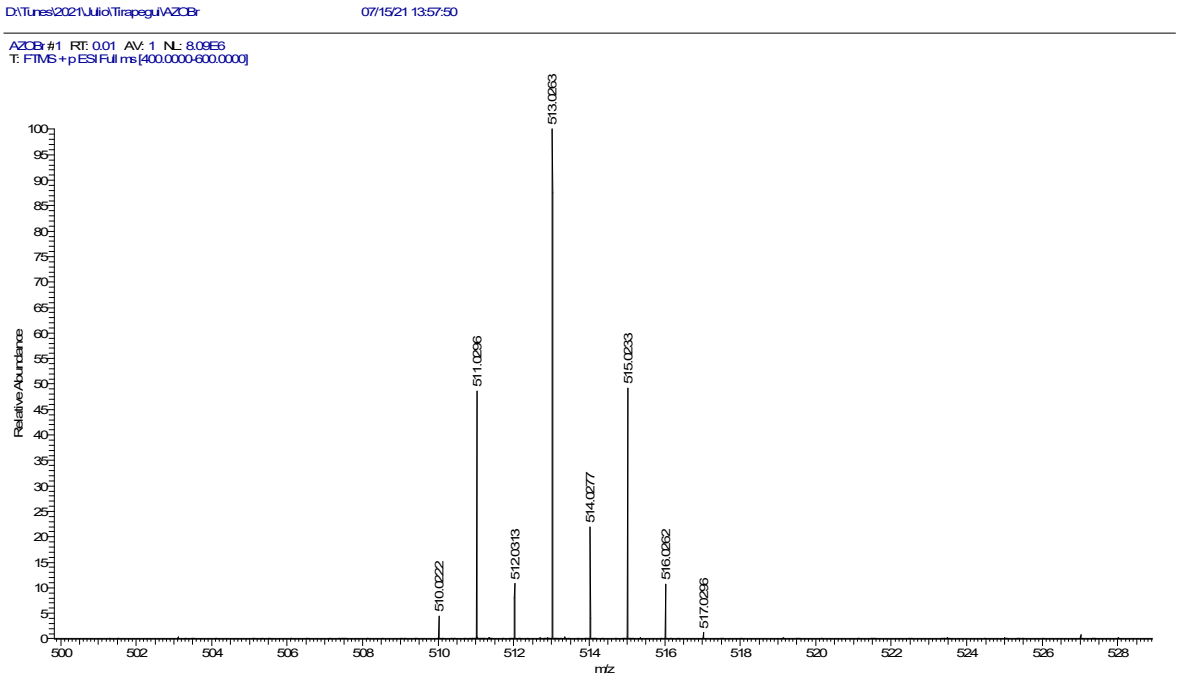
Figure S3. UHPLC-TIC (ultra HPLC total ion current) chromatograms and full scan spectra of **AZO$_{imid}$** and **AZO$_{pyr}$**.

Sample: AZOBr (m/z 510.01482)

Polarity: Positive, Ionization Voltage: 6 kV

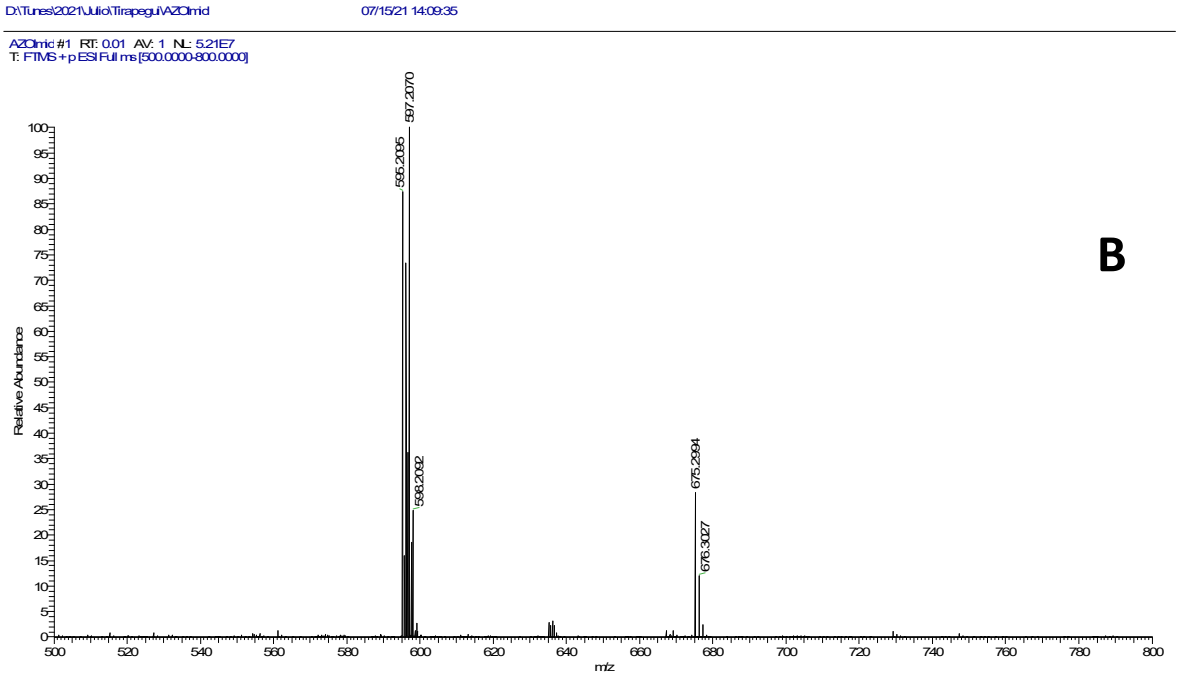


Zoom

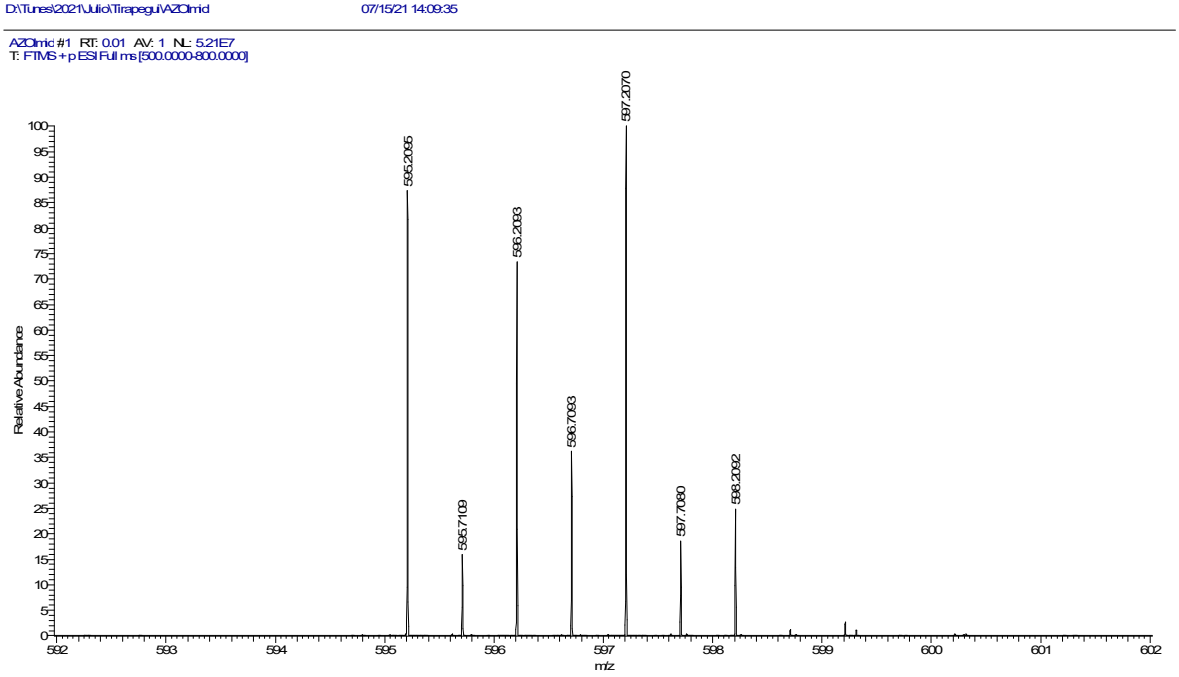


Sample: AzoImid (m/z 674.12102)

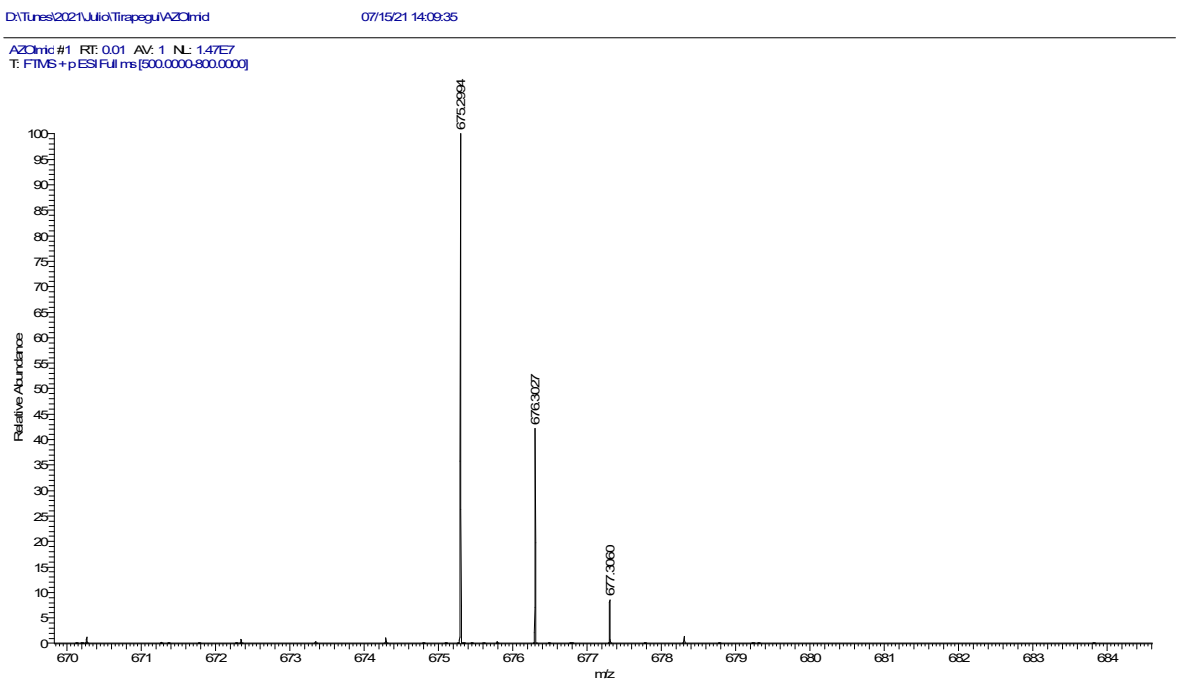
Polarity: Positive, Ionization Voltage: 6 kV



Zoom1

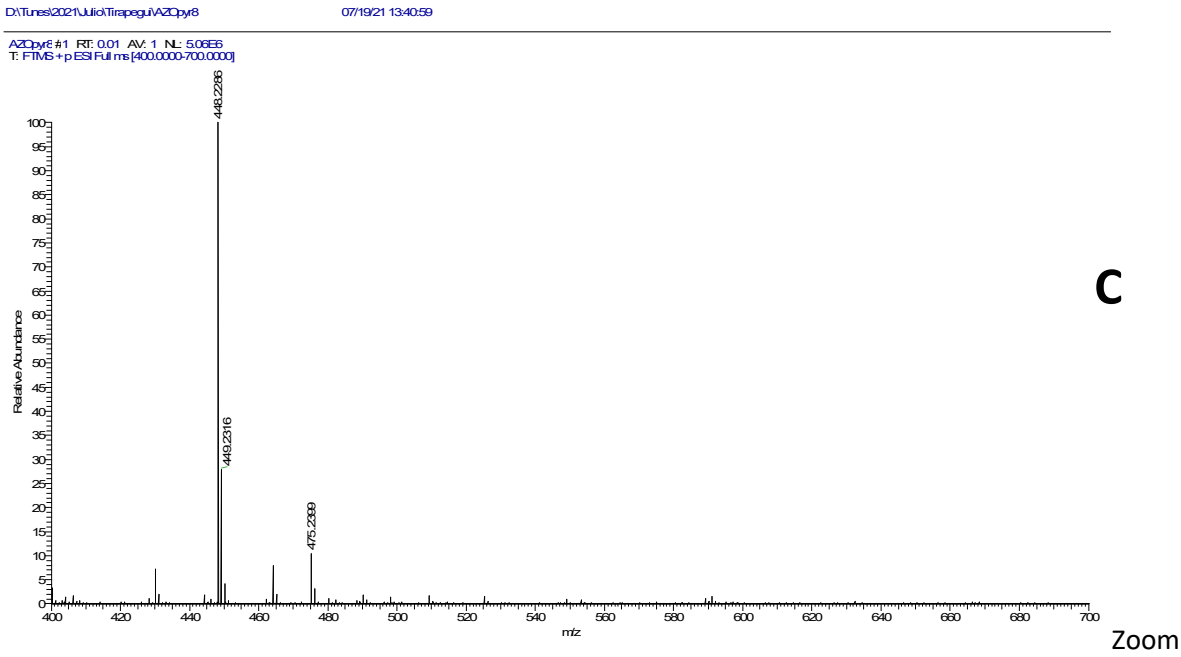


Zoom2


D:\Tunes\2021\Julio\Tirapegui\AZOlmid 07/15/21 14:09:35
AZOlmic #1 RT: 0.01 AV: 1 NL: 1.47E7
T: FTMS + p ESI Full ms [500.0000-800.0000]
675.2994
676.3027
677.3060
Relative Abundance
m/z

Sample: Azopyr (m/z 668.09922)

Polarity: Positive, Ionization Voltage: 6 kV



1

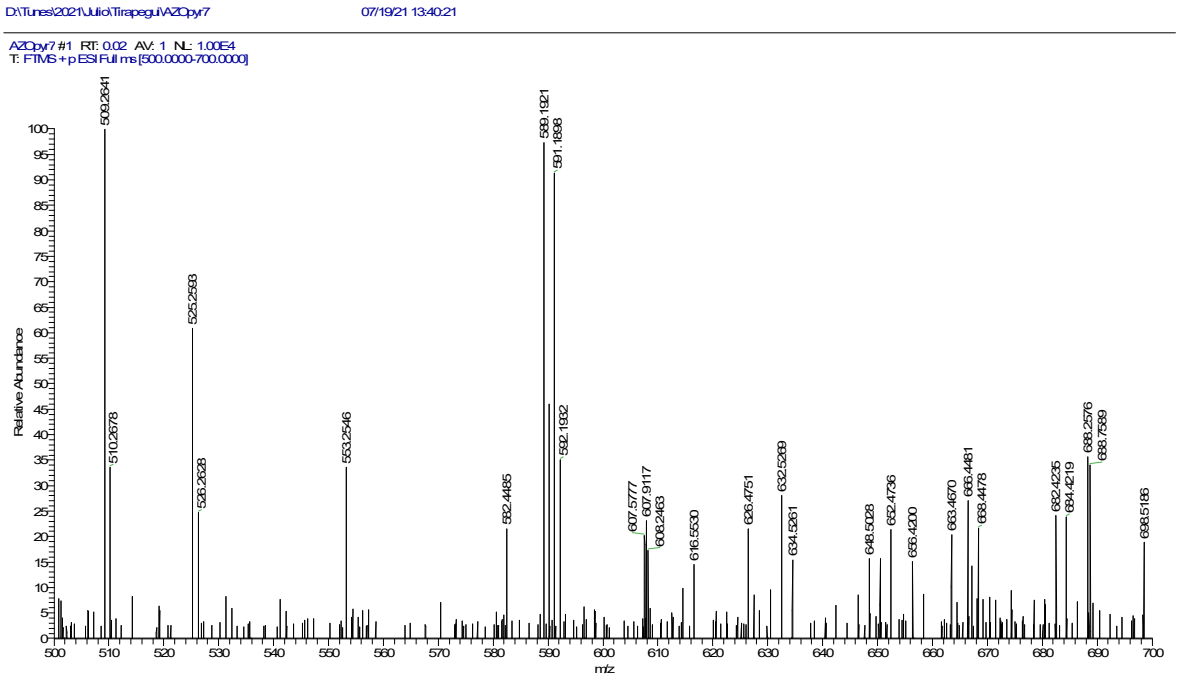
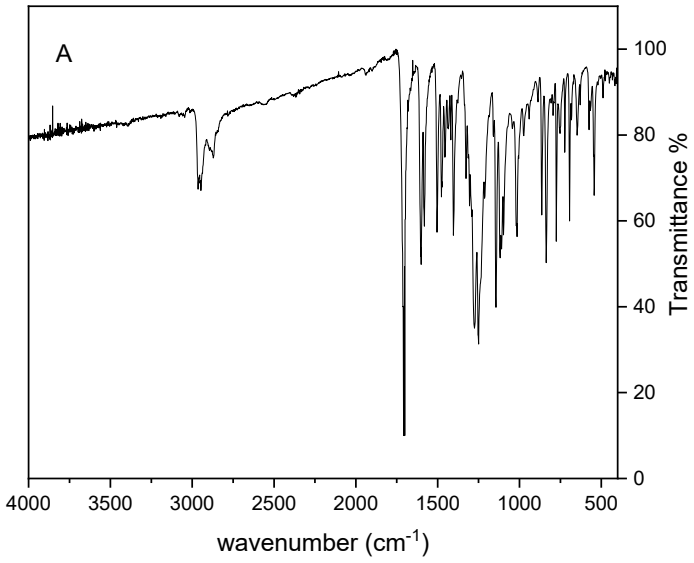
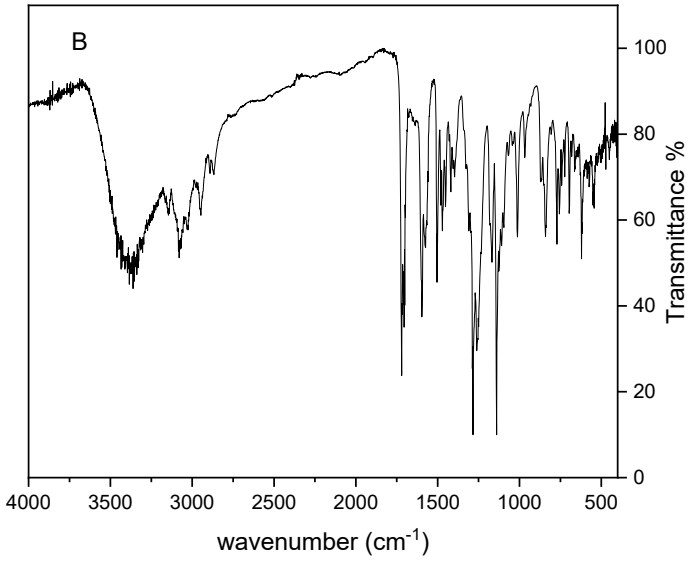


Figure S4. High Resolution Mass Spectroscopy of **AZO_{Br} (A)**, **AZO_{imid} (B)** and **AZO_{pyr} (C).**


A
100
80
60
40
20
0
Transmittance %
4000
3500
3000
2500
2000
1500
1000
500
wavenumber (cm-1)


B
100
80
60
40
20
0
Transmittance %
4000
3500
3000
2500
2000
1500
1000
500
wavenumber (cm-1)

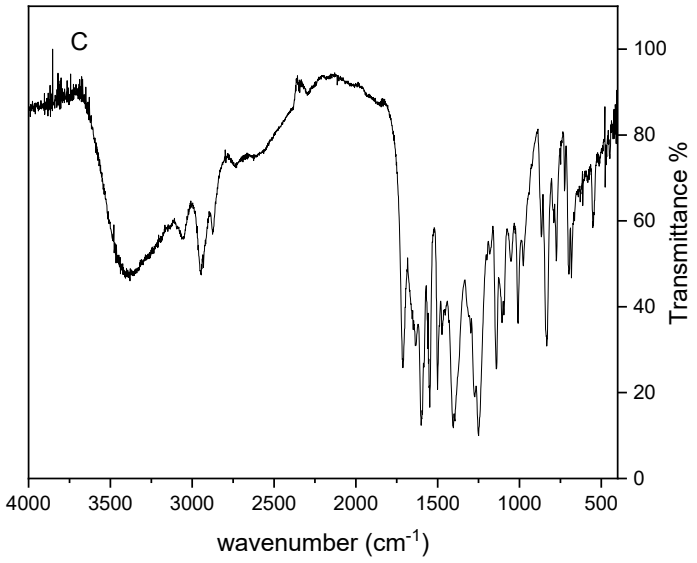
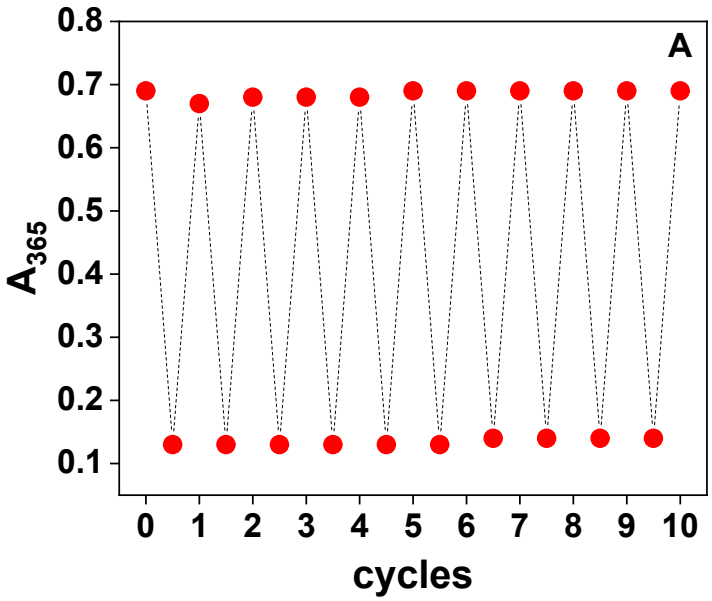
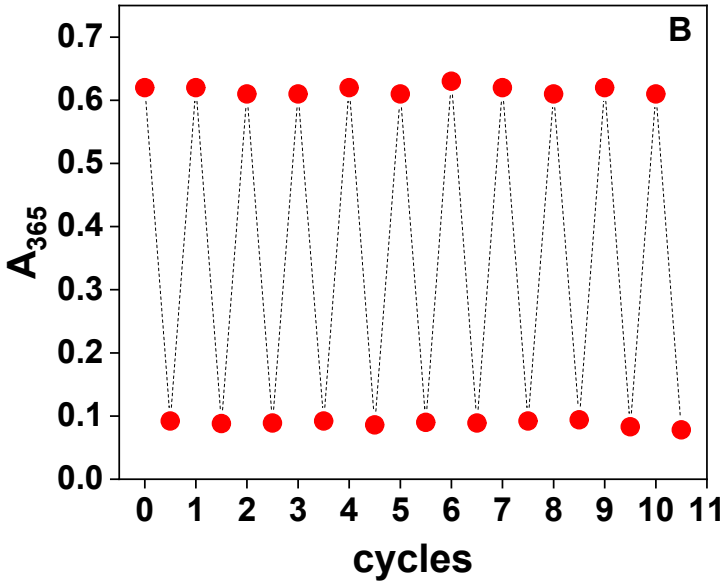
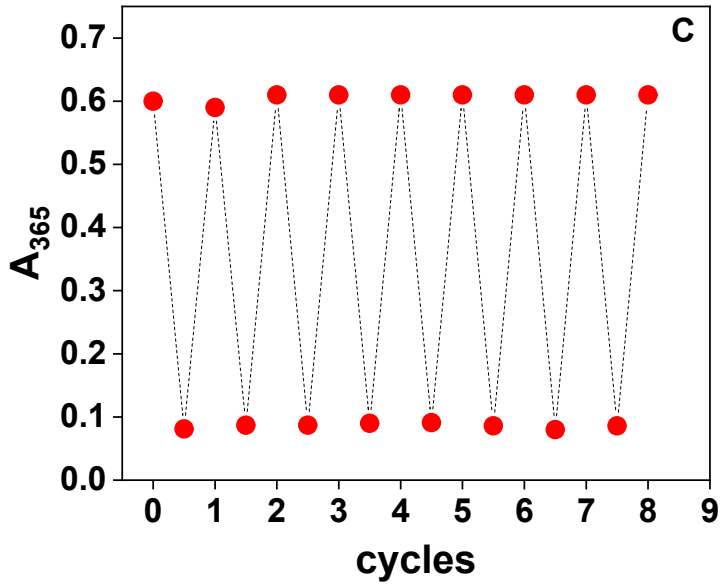


Figure S5. Infrared spectra of **AZO_{Br} (A)**, **AZO_{imid} (B)** and **AZO_{pyr} (C).**


A
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
A_{365}
0 1 2 3 4 5 6 7 8 9 10
cycles


B
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
A_{365}
0 1 2 3 4 5 6 7 8 9 10 11
cycles



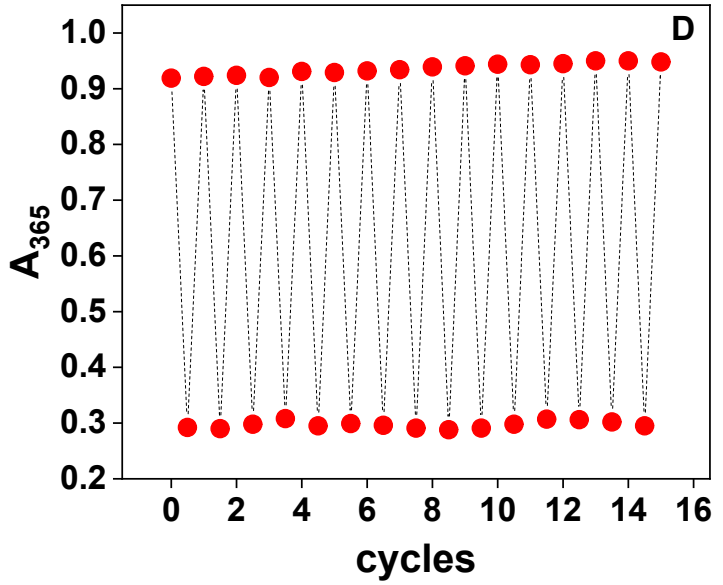


Figure S6. Material fatigue for $\mathbf{AZO_{Br}}$ in MeOH (A), DMSO (B), PAF (C) and $\mathbf{AZO_{Br}}$ in MeOH (D). $[\mathbf{AZO_{Br}}]_{MeOH} = 3.03 \times 10^{-5}$ M, $[\mathbf{AZO_{Br}}]_{DMSO,\ PAF} = 3.50 \times 10^{-5}$ and $[\mathbf{AZO_{pyr}}]_{MeOH} = 6.94 \times 10^{-5}$ M.