

Voltammetry and Spectroelectrochemistry of TCNQ in Acetonitrile/RTIL Mixtures

Abderrahman Atifi and Michael D. Ryan*

Marquette University, Chemistry Department, PO Box 1881, Milwaukee, WI 53092 USA
E-mail: Michael.ryan@marquette.edu

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Table S1. Cyclic voltammetry of TCNQ in mixtures of acetonitrile and BMImPF₆ or BMImBF₄. Acetonitrile solutions contained 0.10 M TBAP

Cyclic voltammetry of TCNQ in acetonitrile/BMImPF₆

%BMImPF ₆	E° ₁ , V vs Ag/AgNO ₃	E° ₂ , V vs Ag/AgNO ₃	ΔE°, mV
0	-0.101	-0.650	549
5	-0.113	-0.642	530
10	-0.109	-0.631	523
20	-0.106	-0.615	509
33	-0.105	-0.596	491
75	-0.102	--	--
100	-0.102	-0.541	439

Cyclic voltammetry of TCNQ in acetonitrile/BMImBF₄

%BMImBF ₄	E° ₁ , V vs Ag/AgNO ₃	E° ₂ , V vs Ag/AgNO ₃	ΔE°, mV
0	-0.096	-0.645	549
5	-0.101	-0.635	534
10	-0.103	-0.626	524
20	-0.102	-0.610	508
33	-0.100	-0.593	494
50	-0.101	-0.576	476
75	-0.101	-0.557	456
100	-0.096	-0.523	427

Figure S1. Mixture of acetonitrile with 60% (v/v) BMImPF₆. Red: BMIm⁺, Green: PF₆⁻, Blue/white: acetonitrile. Adapted with permission from Acc. Chem. Res. (2007) 40, 1087-1096. Copyright 2007 American Chemical Society.

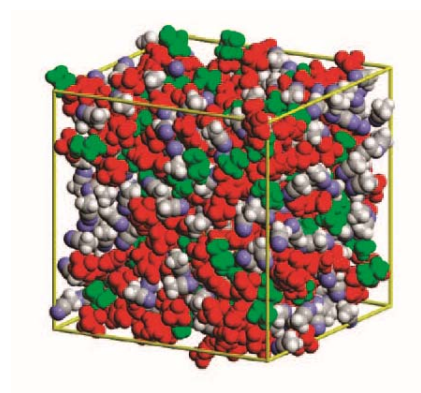


Figure S2. Cyclic voltammetry of TCNQ in AmNTf₂, BMImBF₄, BMImPF₆, BMImNTf₂ and acetonitrile. Scan rate: 100 mV/s. Working electrode: Platinum. Acetonitrile contained 0.10 M TBAP

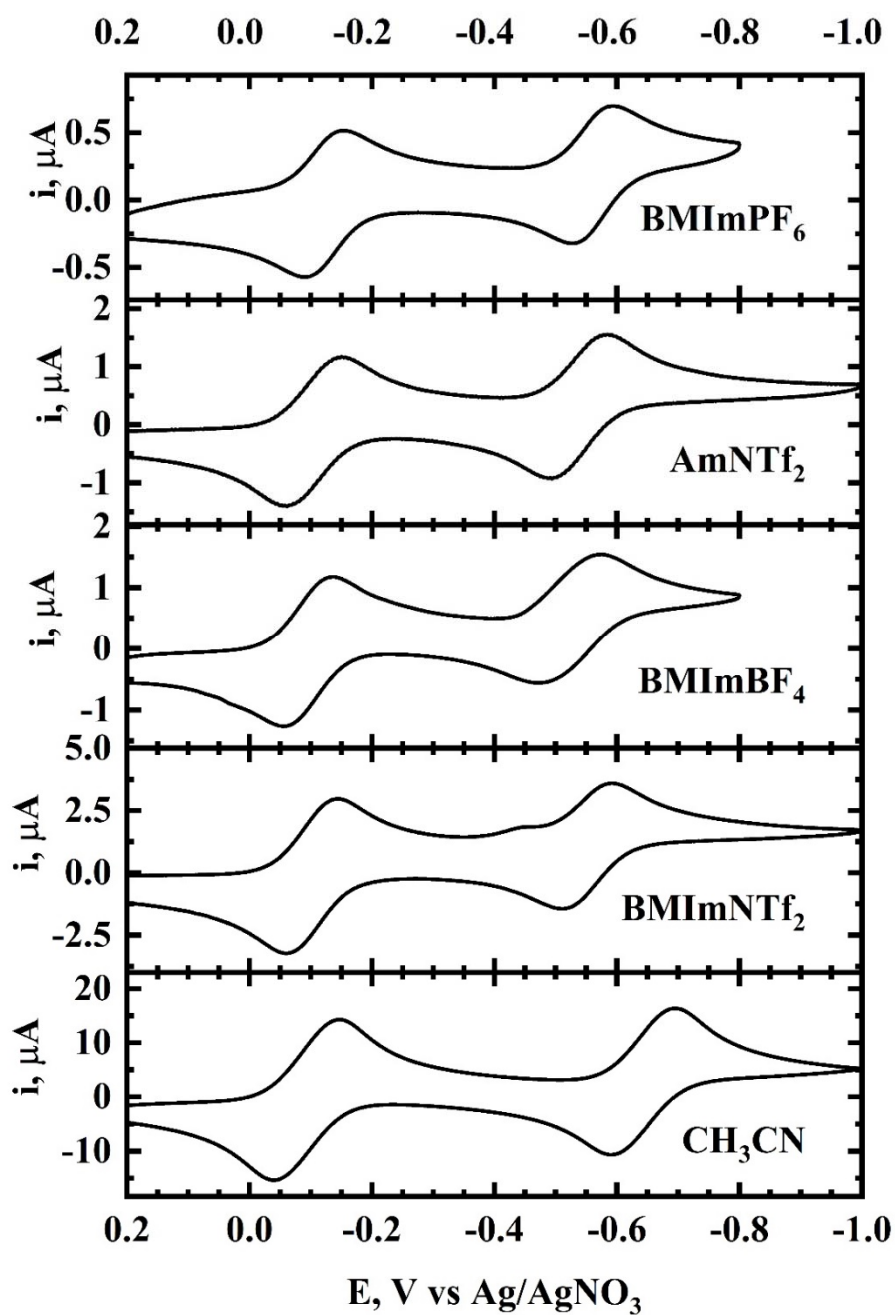
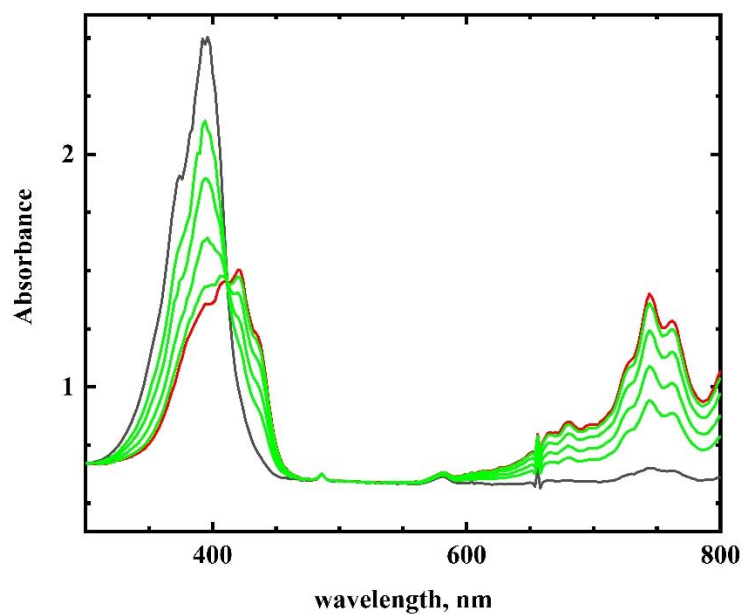
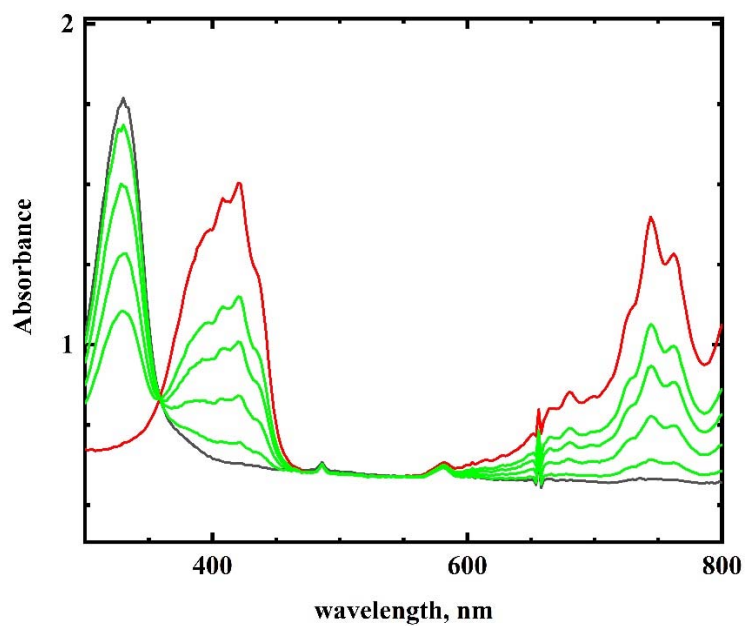


Figure S3. Visible spectroelectrochemistry of TCNQ in acetonitrile. A. First wave. B. Second wave. Electrolyte: 0.10 M TBAP



A



B

Figure S4. Infrared spectroelectrochemistry of TCNQ in THF. Initial difference spectrum (black); TCNQ \cdot^- (blue); TCNQ $^{2-}$ (green); end of scan (red). Electrolyte: 0.10 M TBAP

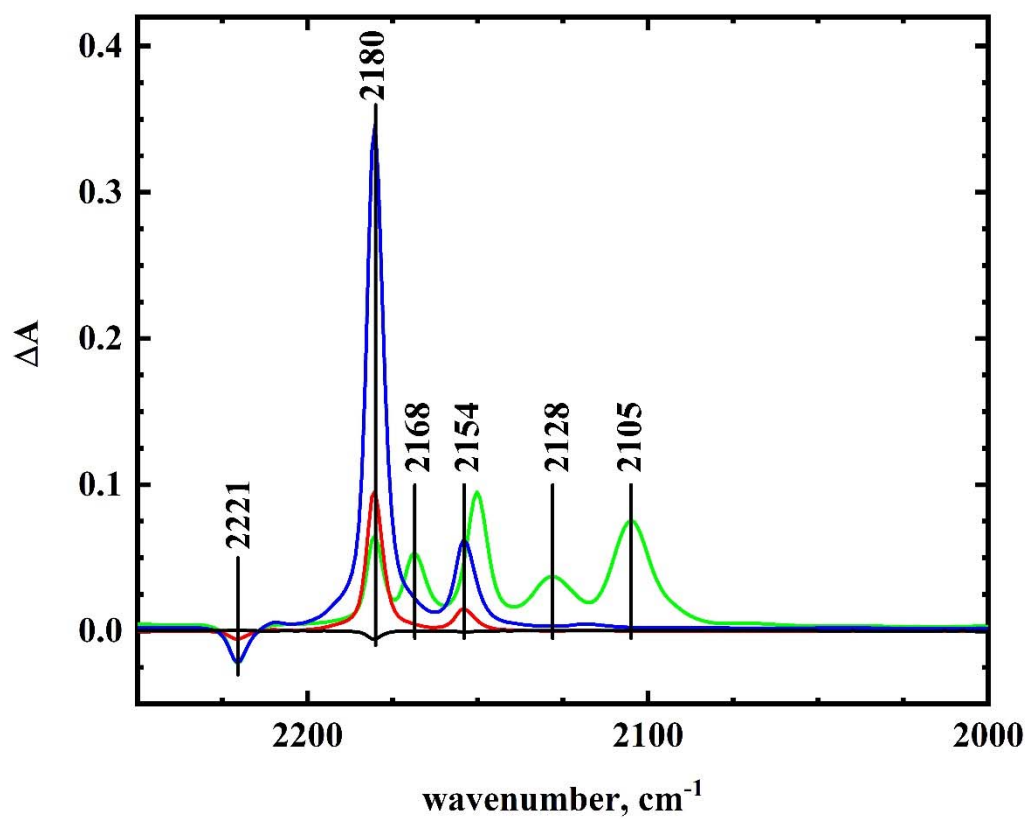


Figure S5. DFT structure of the tetramethylammonium-TCNQ²⁻ ion pair. Gaussian 16.

