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Control of recombination rate by changing the polarity of the electrolyte in Dye-sensitized Solar Cells

Jesús Idígoras, Ramón Tena-Zaera, Juan A. Anta

Área de Química Física, Departamento de Sistemas Físicos, Químicos y Naturales, Universidad Pablo de Olavide, E-41013, Sevilla, Spain

Energy Division, IK4-CIDETEC, Parque Tecnológico de San Sebastián, Paseo Miramón 196, Donostia-San Sebastián 20009, Spain

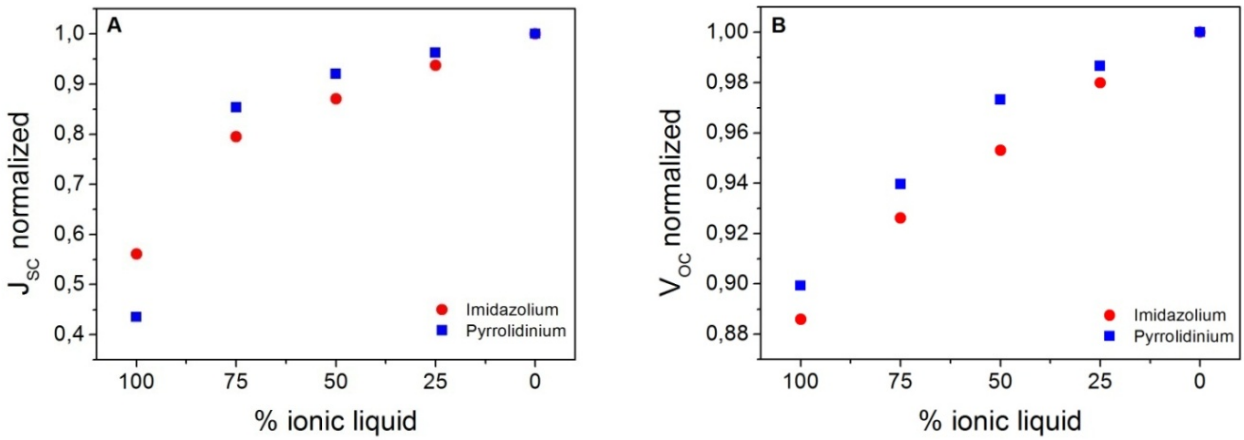

Figure S1: J_{sc} (A) and V_{oc} (B) for all electrolytes normalized by the J_{sc} and V_{oc} obtain in pure acetonitrile-based electrolyte in N719-cells.

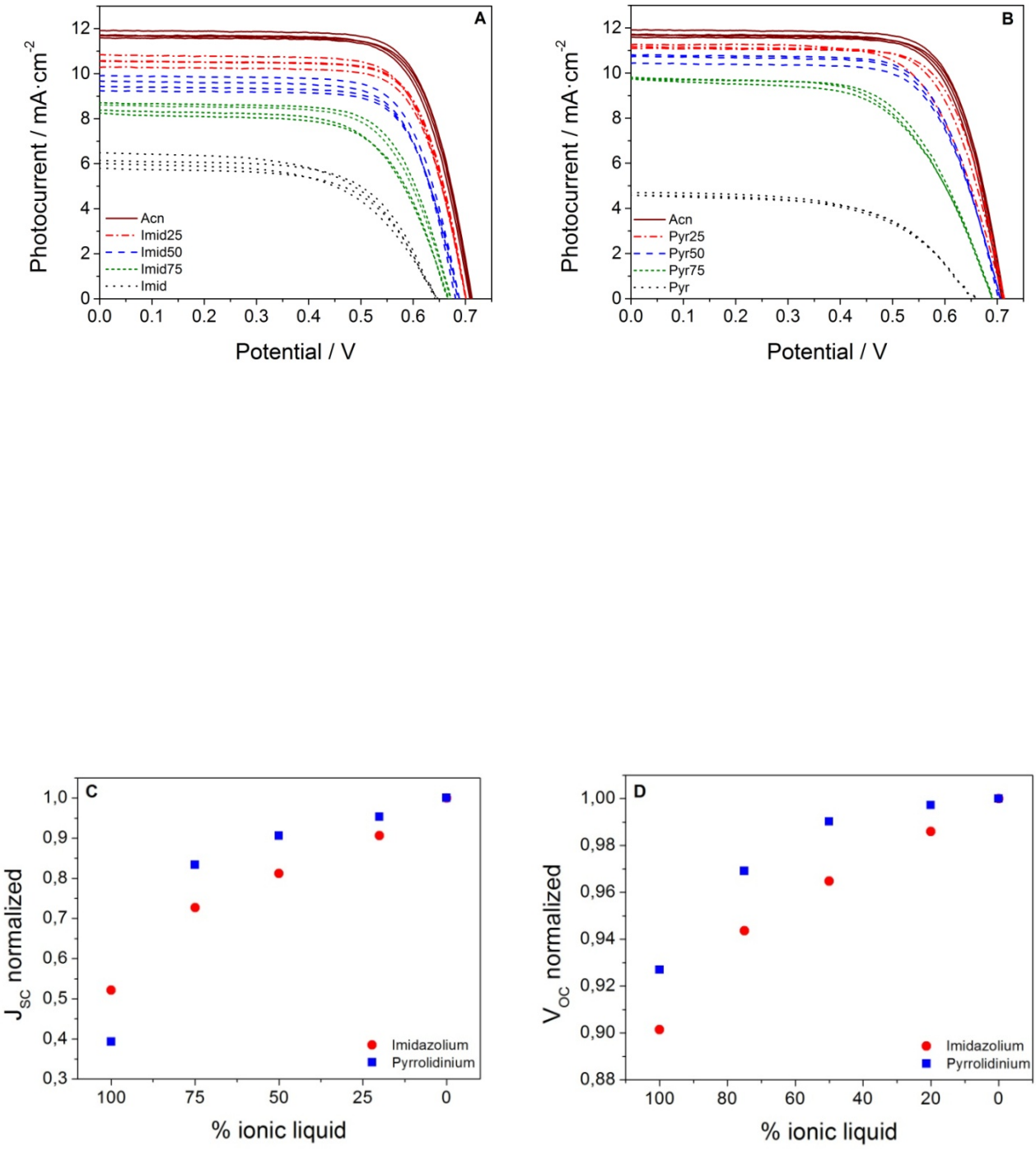

Figura S2: Current-voltage curves under 1-sun AM1.5 for all RTIL/Acn mixing ratios for both used ionic liquids: A) Imid and B) Pyr. J_{sc} (C) and V_{oc} (D) for all electrolytes normalized by the J_{sc} and V_{oc} obtain in pure acetonitrile-based electrolyte in Z907-cells

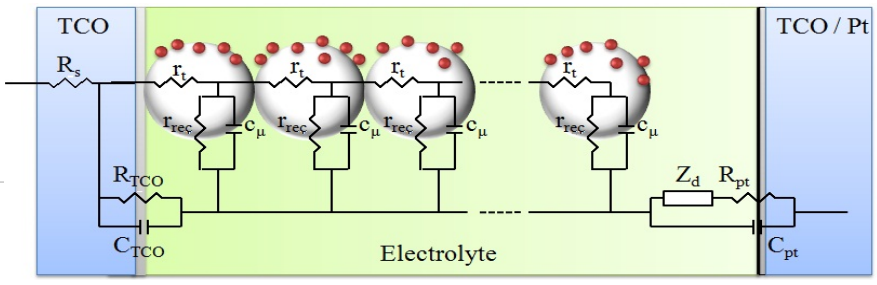

Figure S3: Equivalent circuit utilized to fit impedance data.

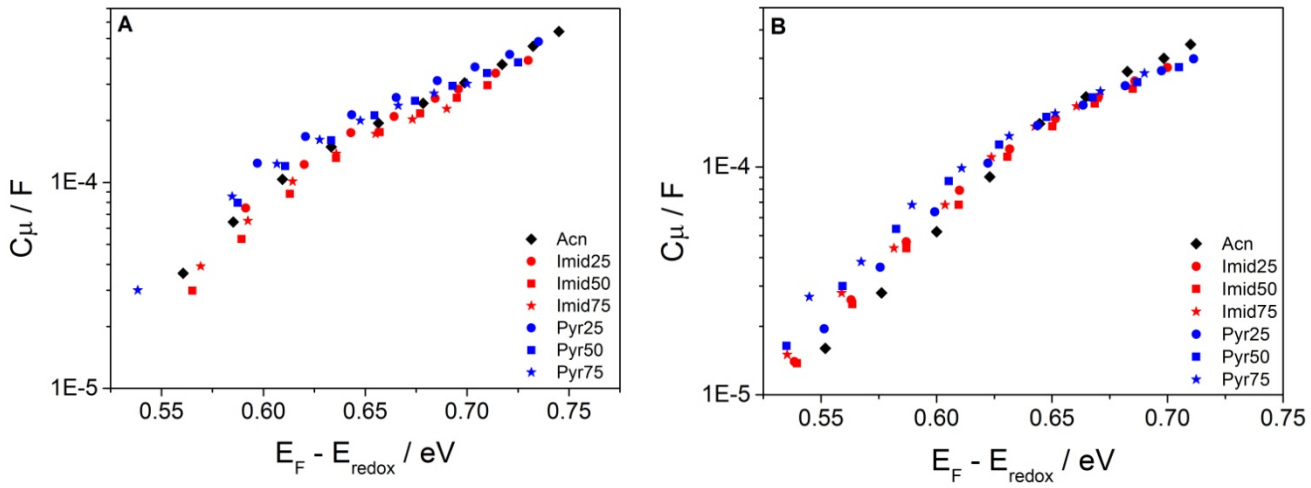

Figure S4: Chemical capacitance data as extracted from EIS measurement for (A) N719-cells and (B) Z907-cells.

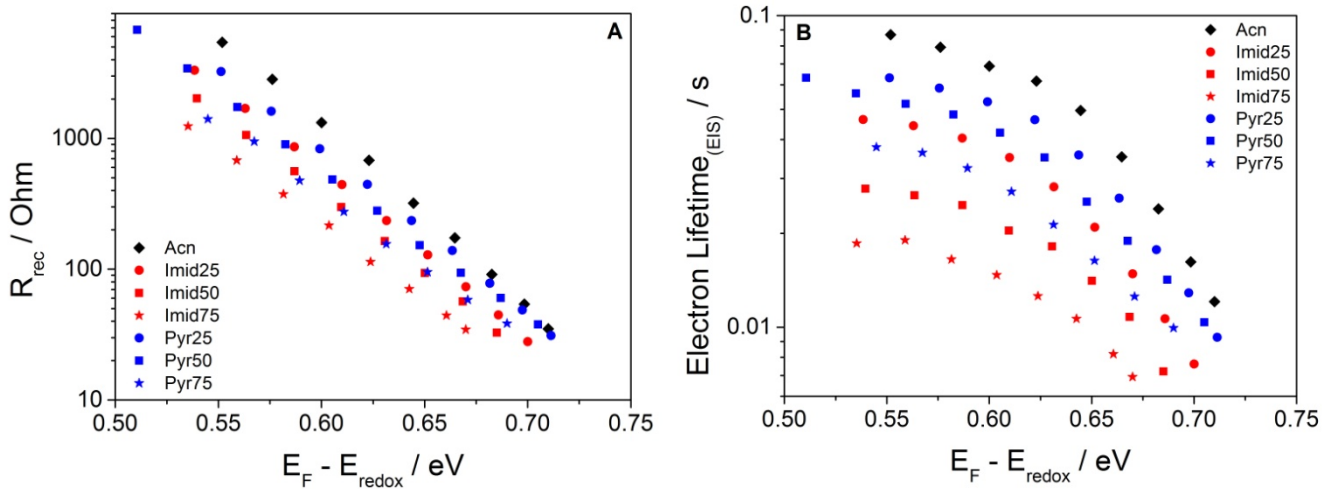

Figure S5: (A) Electron recombination resistance and (B) electron lifetime data are extracted from EIS measurement for Z907-cells

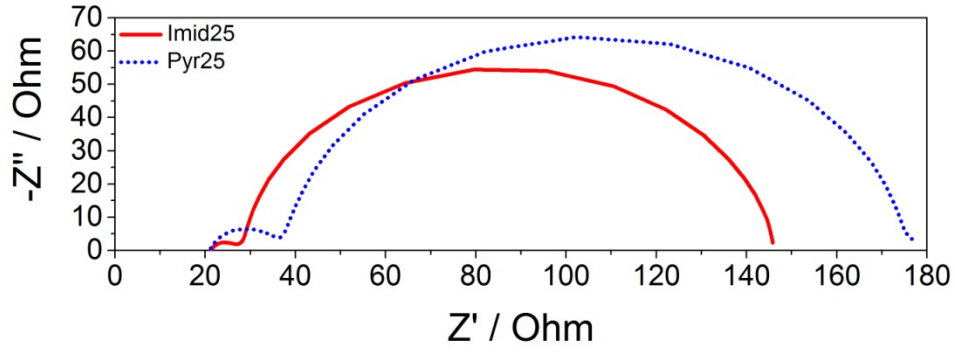

Figure S6: EIS Nyquist plots at 0.665mV for cells with Imid and Pry-based electrolytes in N719-cells of the same RTIL/Acn mixing ratio (25%).

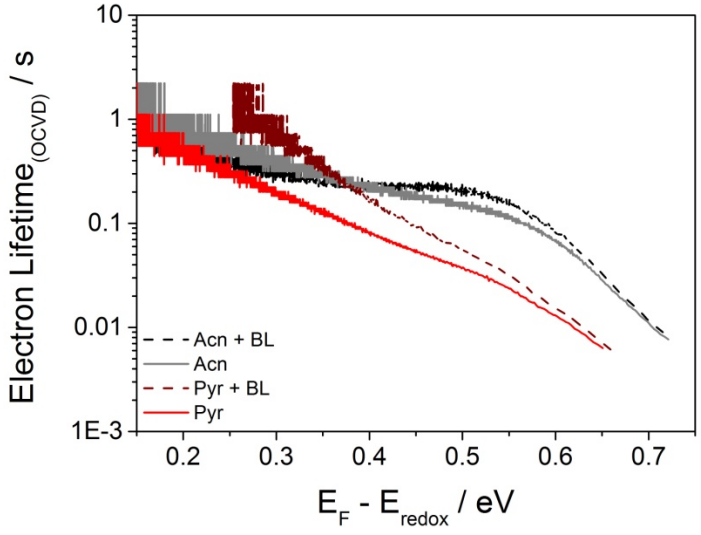

Figure S7: Electron lifetime data extracted by OCVD for Z907- cell with and without blocking layer (BL).

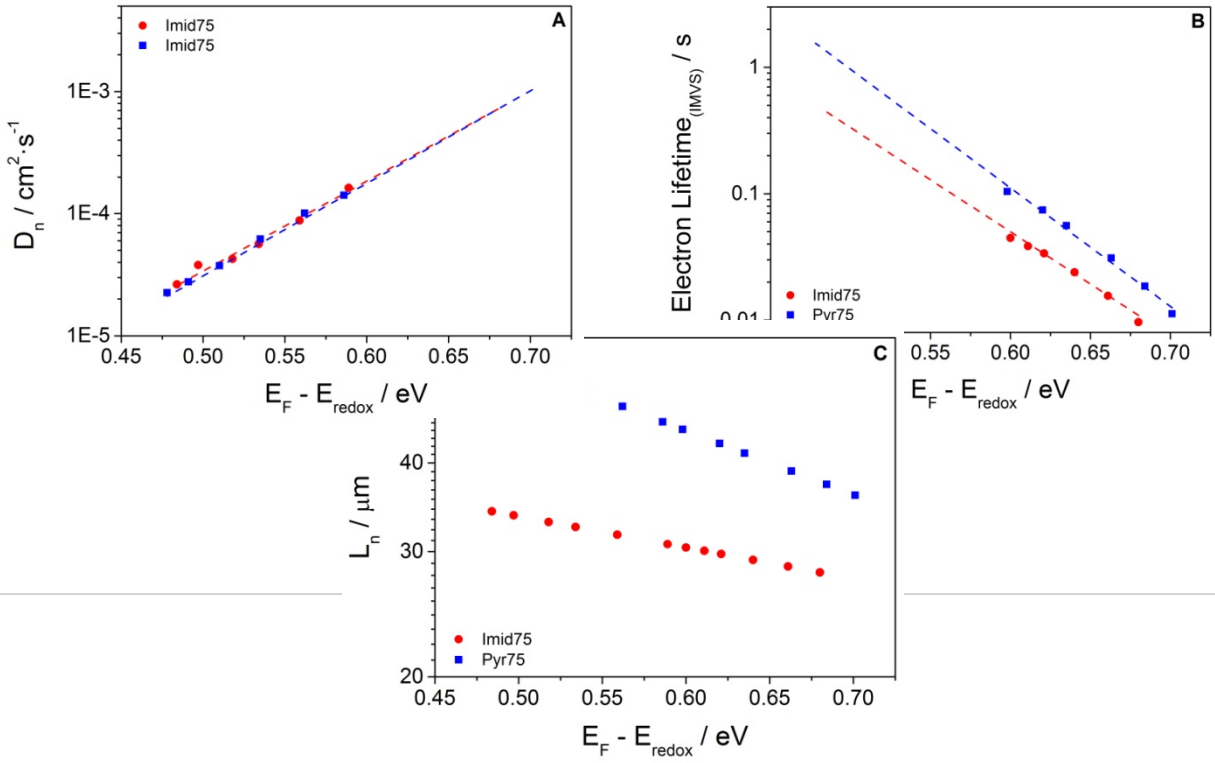

Figure S8: A) Electron diffusion coefficient obtained from IMPS, B) Electron lifetime obtained from IMVS and C) Electron Length diffusion obtained from IMVS and IMPS for Imid75 and Pyr75 in N719-cells.

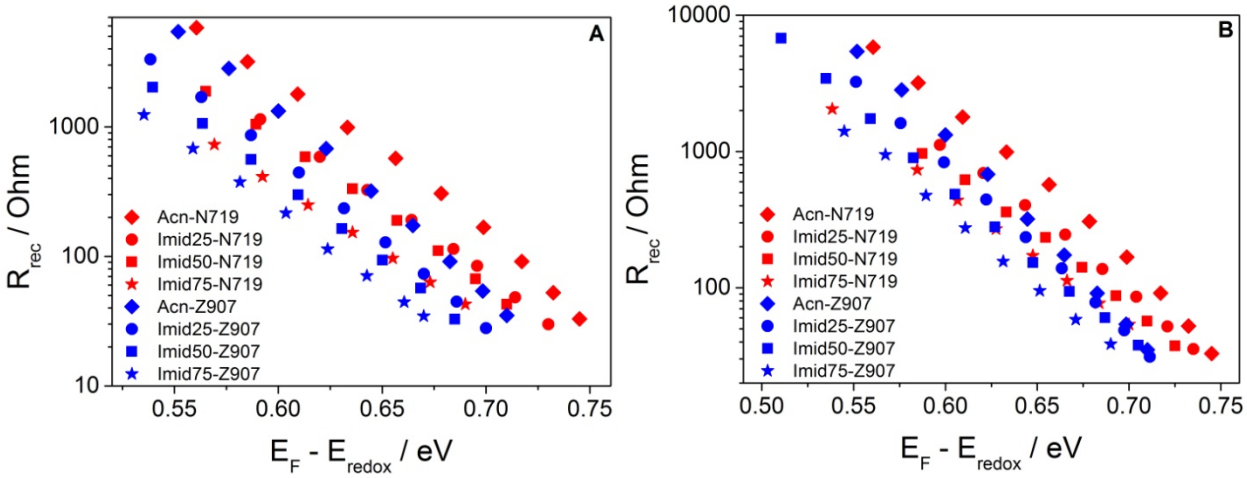

Figure S9: Electron recombination resistance extracted from EIS measurement for all (A) Imid/Acn and (B) Pyr/Acn mixing ratios in N719 and Z907-cells