Supporting Information

Furthering our Understanding of the Doping Mechanism in Conjugated Polymers using Tetraaniline

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Figure S1. The uniformity of UV-vis spectra between two different methods: *in situ* acid doping and proportional mixing of the emeraldine base (EB) and the emeraldine salt (ES) solutions. Comparisons between UV-vis spectra for different doping levels: (a) 12.5%, (b) 25.0%, (c) 50.0%.



Figure S2. The EPR signals fit to Gaussian and Lorentzian distributions as obtained from TANI powders doped with the acids: (a) HCl, (b) HClO₄, (c) PTSA, (d) CSA, and (e) HNO₃.



Figure S3. MALDI-TOF spectrum showing the molar mass of synthesized TANI with 2,5-dihydroxybenzoic acid (DHB) as the matrix. The calculated molar mass for TANI, $C_{30}N_4H_{26}$ is 442.21.



Figure S4. ¹H NMR spectrum of TANI in the EB state in deuterated DMSO. The peak at 8.405 ppm is attributed to the isomer EB1. The two minor peaks at 8.286 and 7.957 are attributed to another isomer, EB2.^[1] The characteristic peaks at 7.74 and 7.58 for leucoemeraldine base TANI are very low, indicating almost all the product is in the emeraldine base state and not the leucoemeraldine state.

[1] E. Rebourt, J.A. Joule, A.P. Monkman, Synthetic Metals, 1997, 84, 65-66.