Supplementary Information

Photoluminescence of Solvent-Selected Fluorescent Moieties in MEH-PPV Solutions and Films

Antonio C. C. Ribeiro,[a,#] Henrique S. Camargo,[a] Douglas H. Pereira,[b,§] Rogério Custódio[b] and Tatiana D. Martins*[a]

[a]*Instituto de Química, Universidade Federal de Goiás, Campus II - Samambaia, P.O. Box 24242, 74690-970 Goiânia-GO, Brazil*

[b]*Instituto de Química, Universidade Estadual de Campinas, P.O. Box 6154, 13083-970 Campinas-SP, Brazil*

MEH-PPV Re-dissolution test

To ensure that no process of oxidation or degradation are responsible for the photophysical behavior detected in non-solvents based samples, we performed this simple re-dissolution and film-reformation test, with subsequent fluorescence spectra recording. Thin films prepared from ethanol and acetonitrile solutions were re-dissolved in 5 mL of chloroform and steady-state excitation and emission spectra were obtained. Then, from this new solution, spin-coated films were prepared, following the same protocol adopted for the previous films preparation. Fluorescence spectra were again registered and they are presented in Figure S1. The usual fluorescence and excitation spectra were restored by this procedure. In addition, when the film and solution excitation is carried out at several wavelengths, excitation-dependent fluorescence is observed. This experiment is indicative of the presence of several fluorescent moieties in all systems studied, each one presenting unique excitation and emission spectra that contribute to the total MEH-PPV emission. It also indicates that they have their luminescence temporally suppressed or overwhelmed by changes in preparation methods, which means that MEH-PPV luminescence can be modulated by the control of preparation procedures.

*e-mail: tatiana@ufg.br

[#]Current address: Instituto Federal de Educação, Ciência e Tecnologia de Goiás, Campus Morrinhos, P.O. Box 92, 75650-000 Morrinhos-GO, Brazil

[§]Current address: Universidade Federal do Tocantins, Campus Gurupi, P.O. Box 66, 77410-530 Gurupi-TO, Brazil

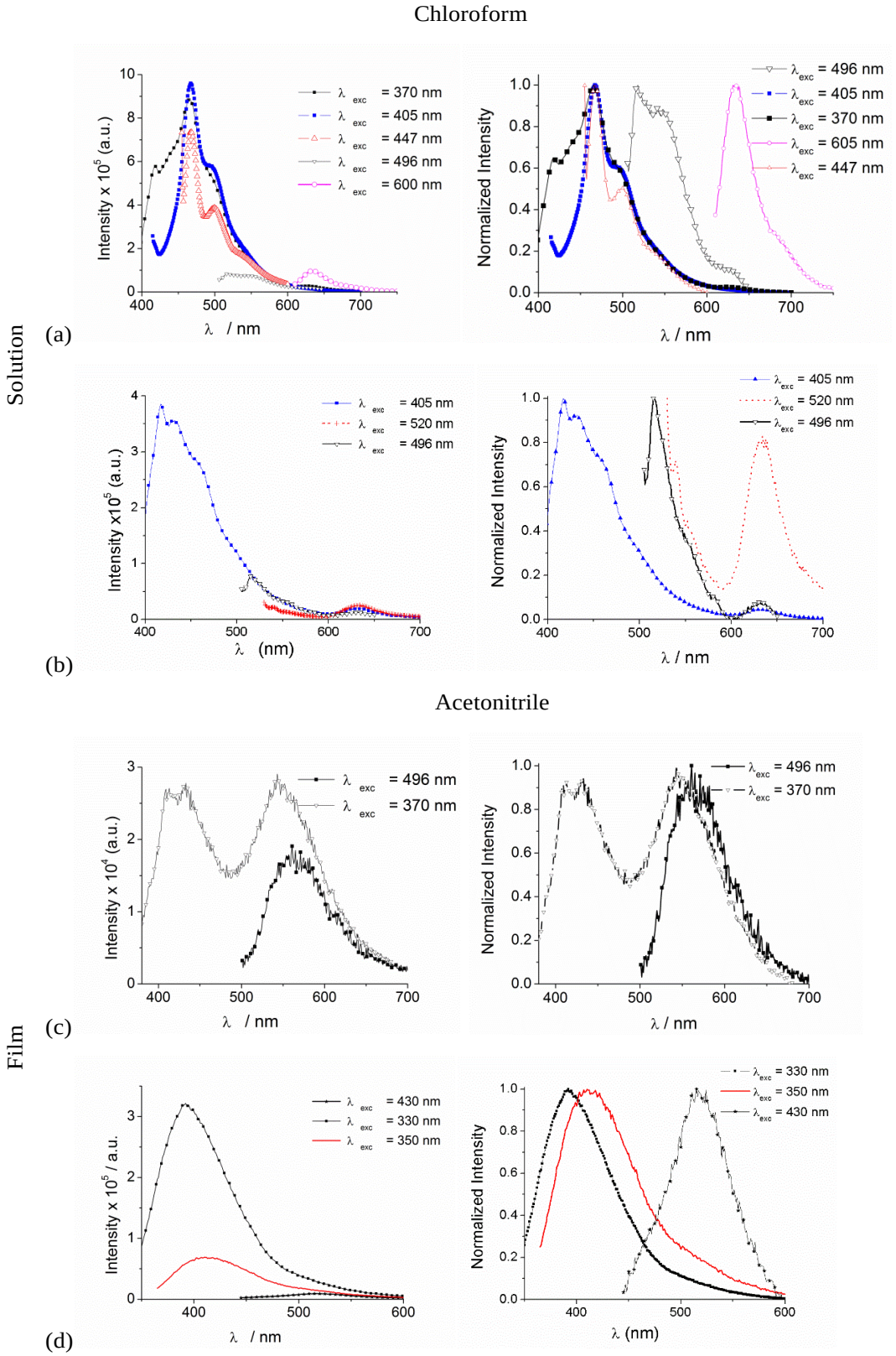


Figure S1. Fluorescence spectra of (a) chloroform solution produced from the dissolution of MEH-PPV film initially produced in acetonitrile; (b) acetonitrile solution produced from the dissolution of MEH-PPV film initially produced in acetonitrile; (c) thin film produced from chloroform solution of the re-dissolved MEH-PPV and (d) thin film produced from acetonitrile solution of the re-dissolved MEH-PPV.

Fluorescence decay curves obtained for MEH-PPV thin films produced from dilute solutions in chloroform and acetonitrile

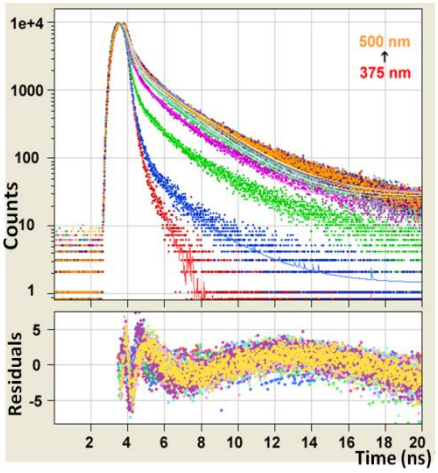
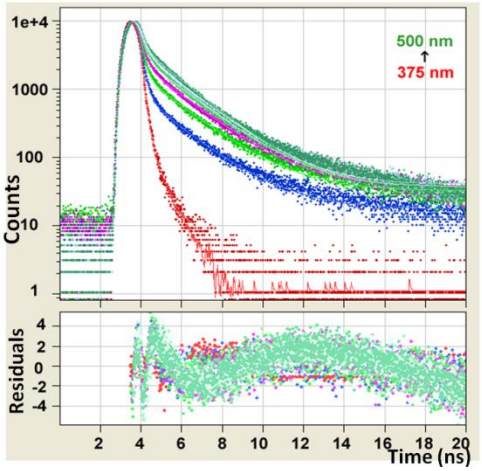
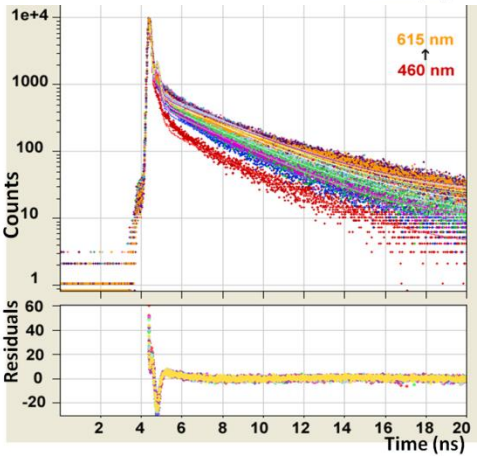
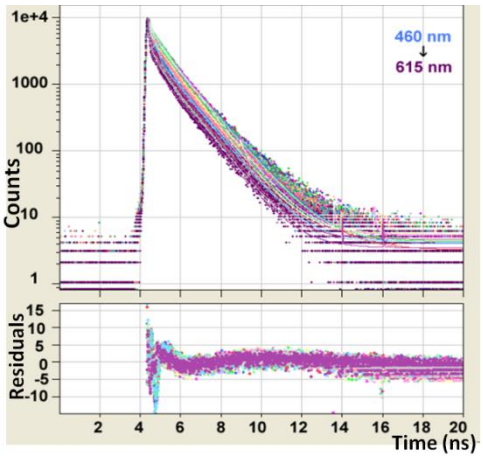
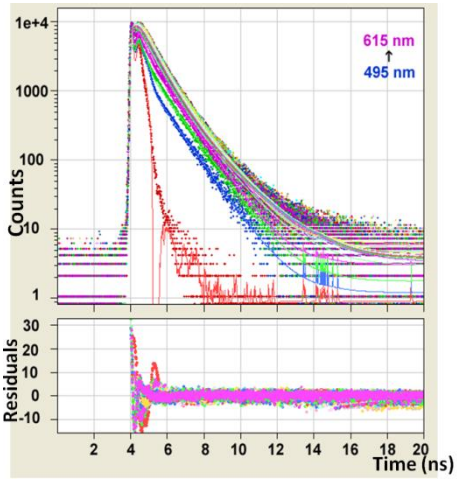
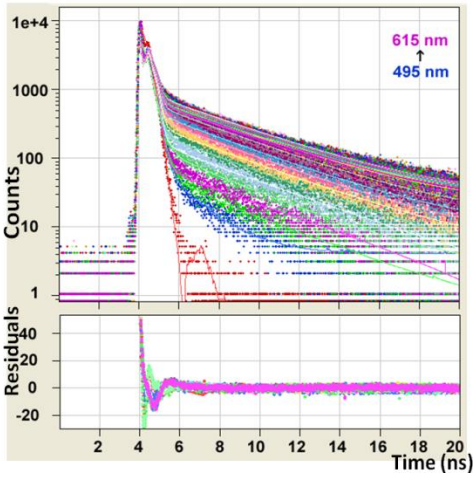
λ_{exc} / nm	Chloroform	Acetonitrile
360		
445		
485		

Figure S2. TRES fluorescence decay curves obtained for MEH-PPV thin films produced from its dilute solutions in chloroform and acetonitrile.

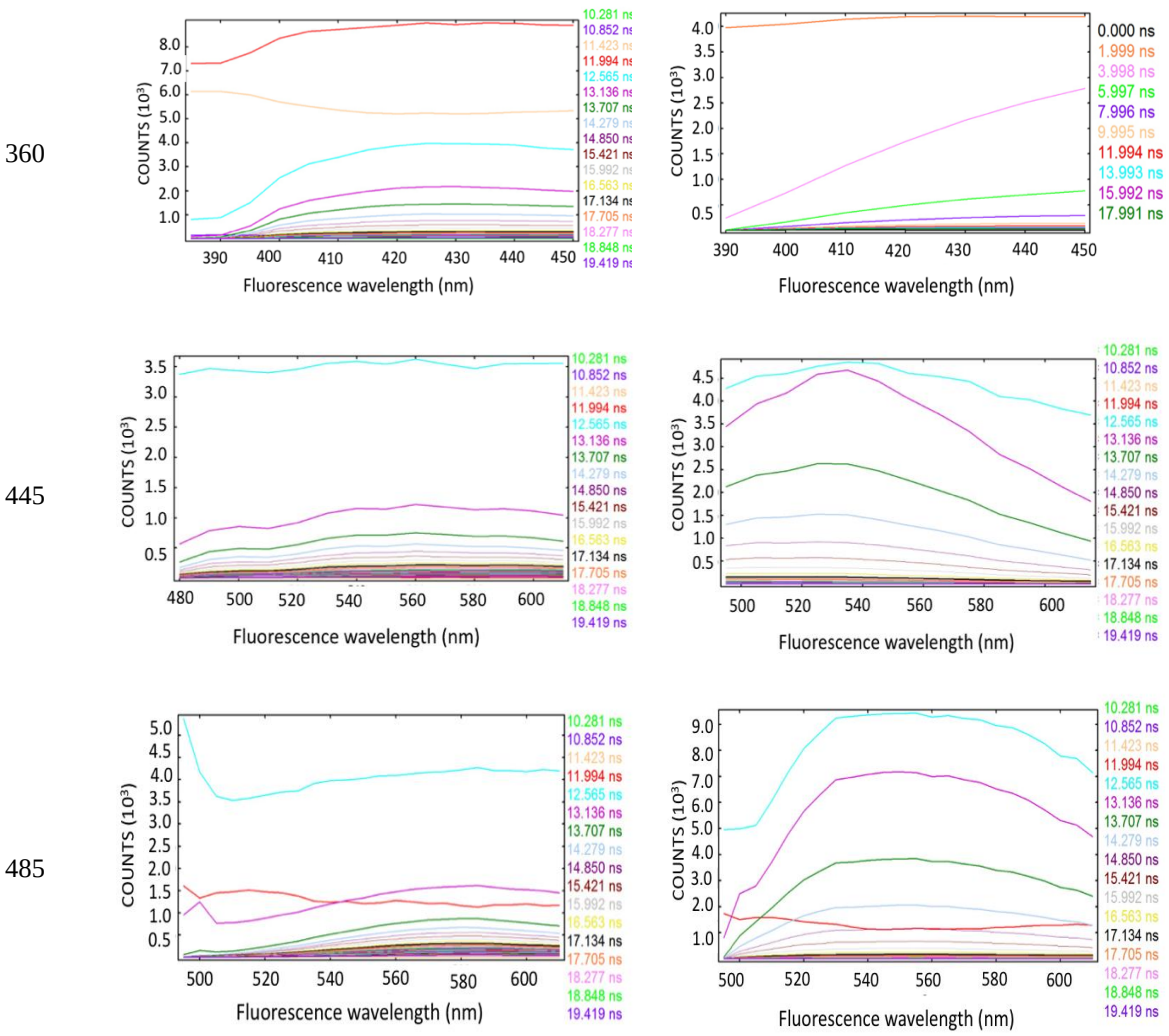


Figure S3. Time-resolved fluorescence spectra of MEH-PPV thin films produced from solutions in chloroform and acetonitrile, obtained from the sliced decay curves.