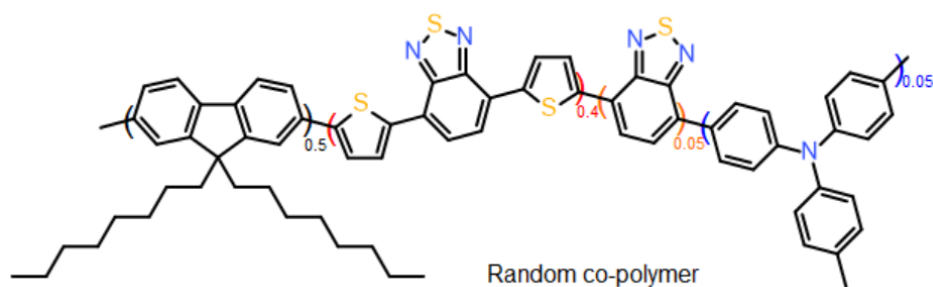


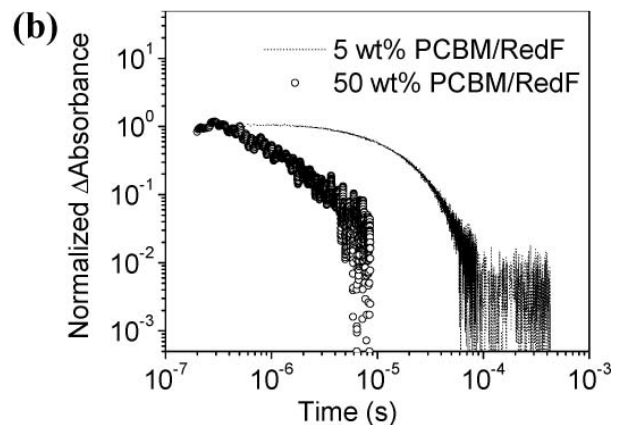
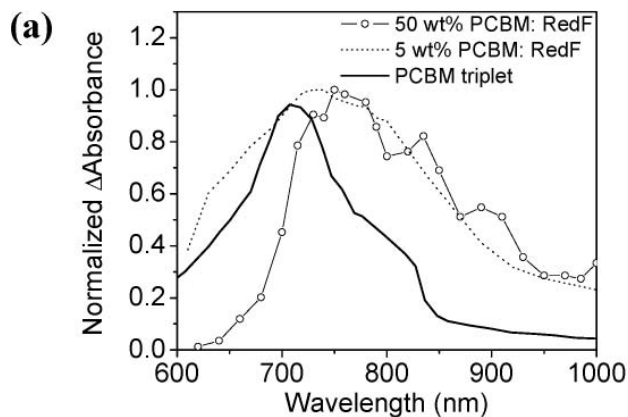
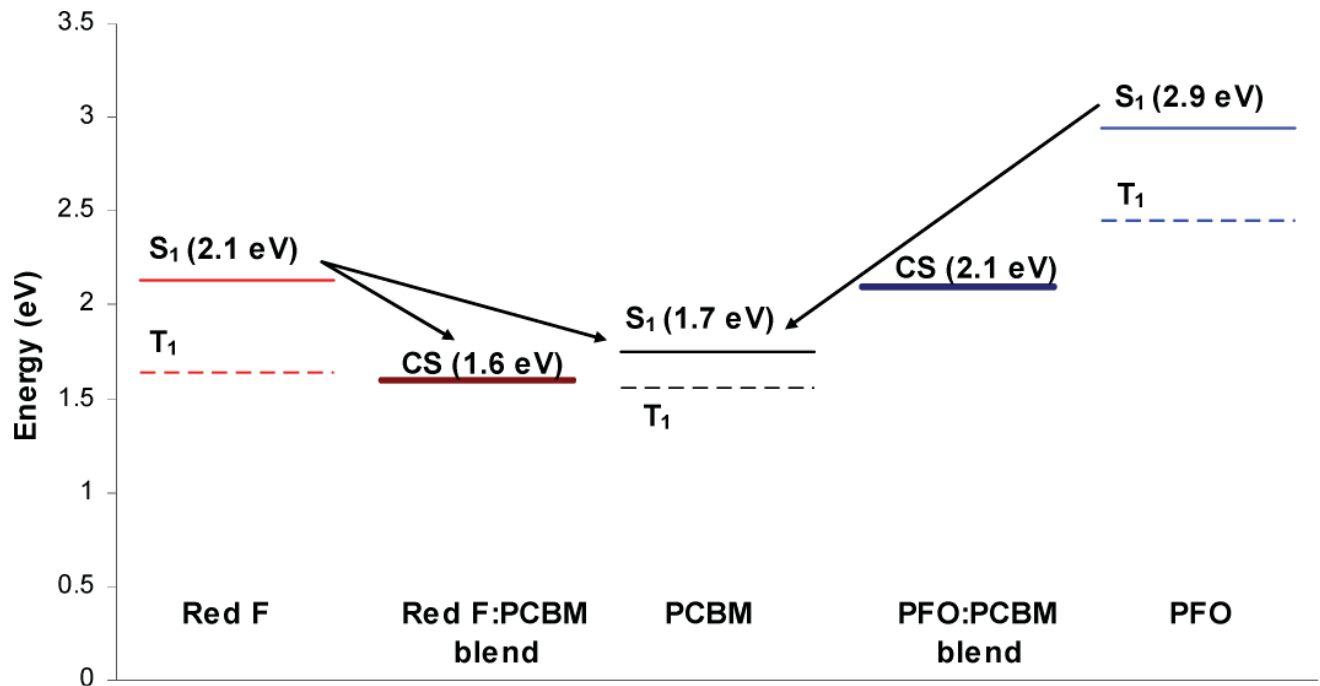
## CERTIFICATE OF ANALYSIS

1M Material: Custom Made Red-F (RedF) polymer  
Other names: Red-F, RedF, Red F, polyfluorene co-polymer  
Chemical Structure:



Lot number: YY22080HE  
Appearance: Red solid  
Molecular weight (GPC): Mw ~ 5.5K; PDI ~ 1.3 (CHCl<sub>3</sub> eluent, PS standard)  
Solubility: Soluble in hexane, DCM, CHCl<sub>3</sub>, and other selected solvents  
Assay: 99+% (basing on NMR of monomers)

1-Material is dedicated to provide the material according to customer's needs, and some material we promoted may be solely offered to certain customers for their specific needs in their research and development projects on a custom synthesis basis or on a contract research basis. All the material is offered as it is, along with the information and technical advice-where verbal, in writing or by way of trials-are given in good faith and are believed to be accurate but without warranty since the conditions of use are beyond the control of 1-Material, and this also applies where proprietary rights of third parties are involved. For the condition and term of our offer and service, please consult the disclaimer in our web: [www.1-material.com](http://www.1-material.com)



**(a)** Transient absorption spectra of 5 wt% PCBM:RedF film (dotted line), and 50 wt% PCBM:RedF (open circles) taken at 1 microsecond in comparison with the spectrum for the PCBM triplet (solid line). The pump and probe wavelengths were 490 nm and 790 nm respectively and the spectra were recorded in an argon atmosphere. **(b)** The transient optical decays for films of 5 wt% PCBM:RedF (dotted line), and 50 wt% PCBM:RedF (open circles) showing the different decay character of the two different composition films.

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