

## Supporting Information

### Fluorescent Molecular Rotors Under Pressure: Synergistic Effects of an Inert Polymer

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**Table S1.** Photophysical properties recorded for ROBOD in a small series of solvents at 20 °C.

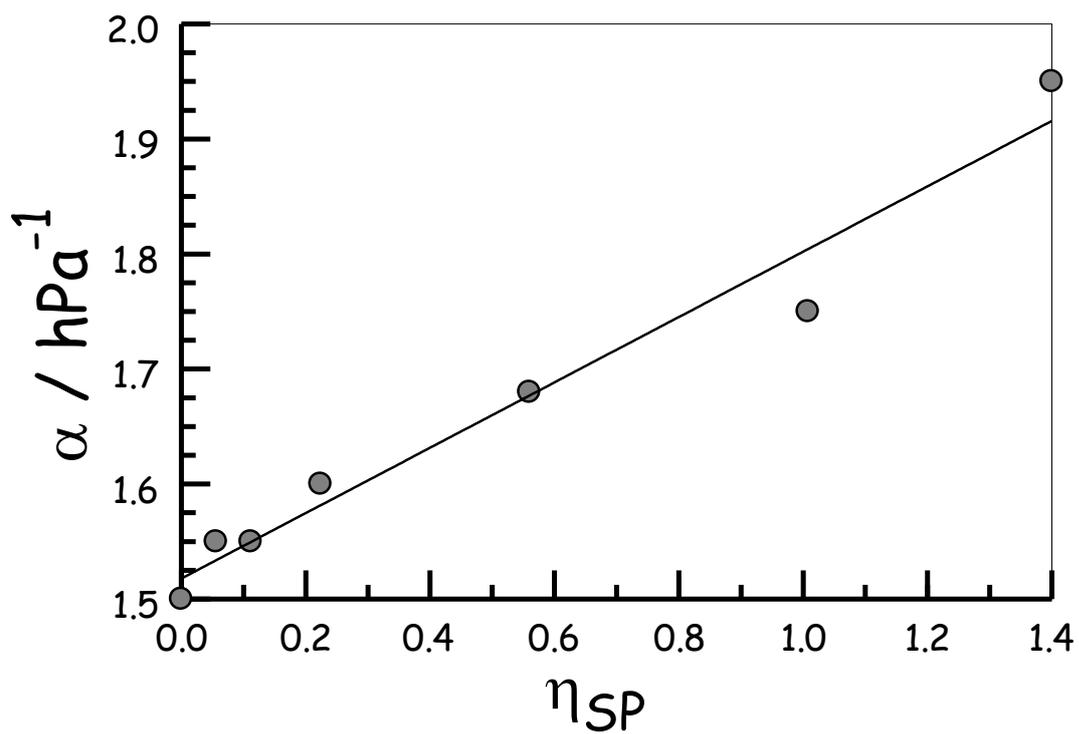
Solvent	$\lambda_{\text{ABS}}$ / nm	$\lambda_{\text{FLU}}$ / nm	$\Delta_{\text{SS}}$ / $\text{cm}^{-1}$	$\Phi_{\text{F}}$	$\tau_{\text{S}}$ / ns	$k_{\text{NR}}$ / $10^9 \text{ s}^{-1}$
CH <sub>2</sub> Cl <sub>2</sub>	504	523	720	0.029	0.19	5.0
MTHF	502	530	1050	0.023	0.15	6.3
EtOAc <sup>(a)</sup>	502	521	725	0.022	0.15	6.7
CHCl <sub>3</sub>	506	524	680	0.036	0.24	4.0

(a) Ethyl acetate

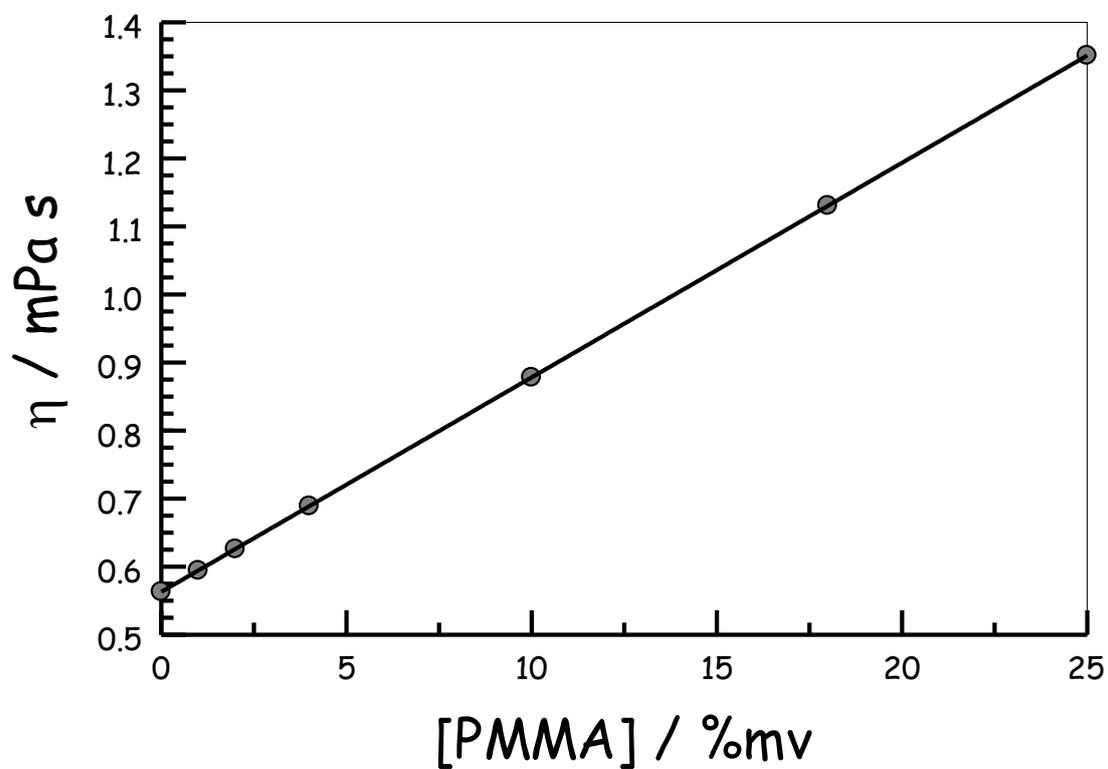
**Table S2.** Photophysical properties recorded for BODIPY in a small series of solvents at 20 °C.

Solvent	$\lambda_{\text{ABS}}$ / nm	$\lambda_{\text{FLU}}$ / nm	$\Delta_{\text{SS}}$ / $\text{cm}^{-1}$	$\Phi_{\text{F}}$	$\tau_{\text{S}}$ / ns	$k_{\text{NR}}$ / $10^7 \text{ s}^{-1}$
CH <sub>2</sub> Cl <sub>2</sub>	528	544	555	0.77	5.1	4.5
MTHF	525	547	765	0.72	4.8	5.8
EtOAc <sup>(a)</sup>	520	541	745	0.79	5.6	3.8
CHCl <sub>3</sub>	530	546	555	0.67	4.5	7.3

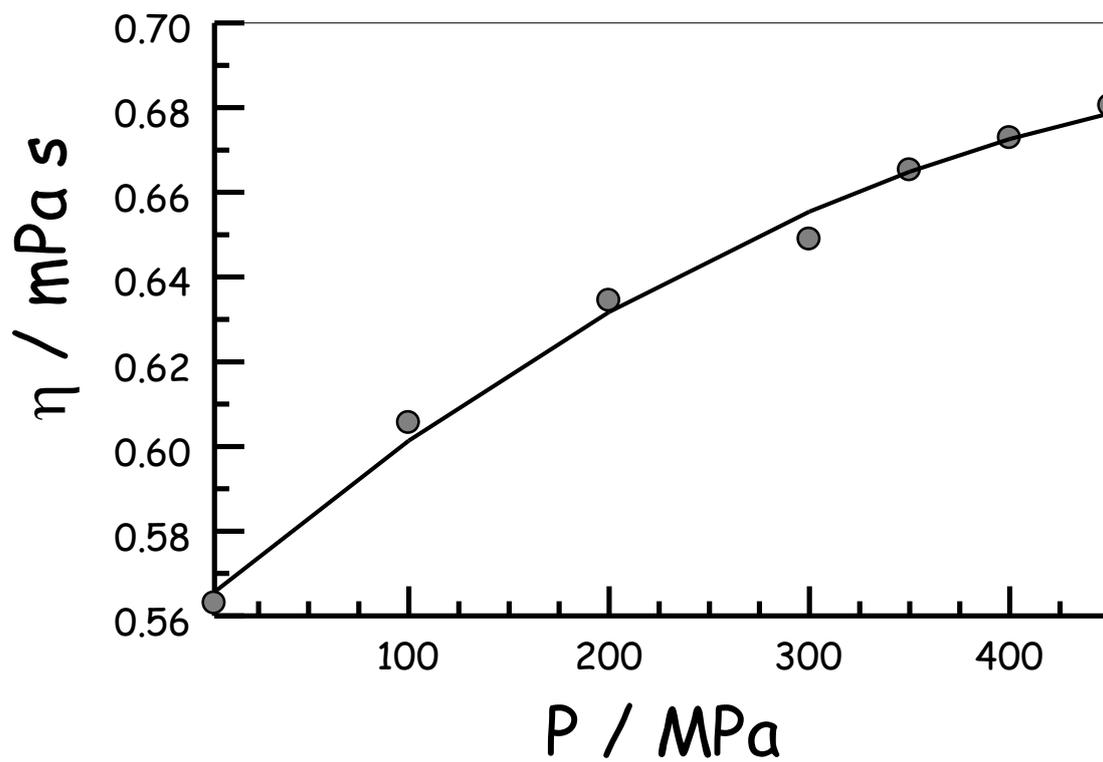
(a) Ethyl acetate



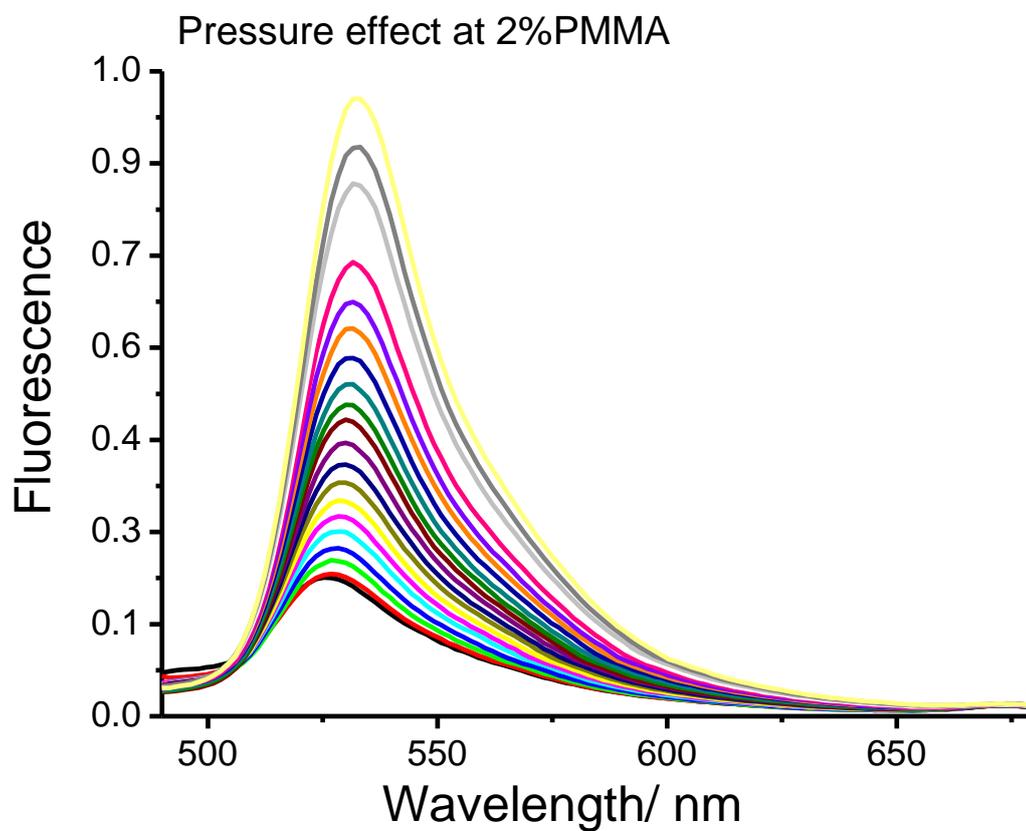
**Figure S1.** Relationship between the derived parameter  $\alpha$  and the specific viscosity of the PMMA solution.



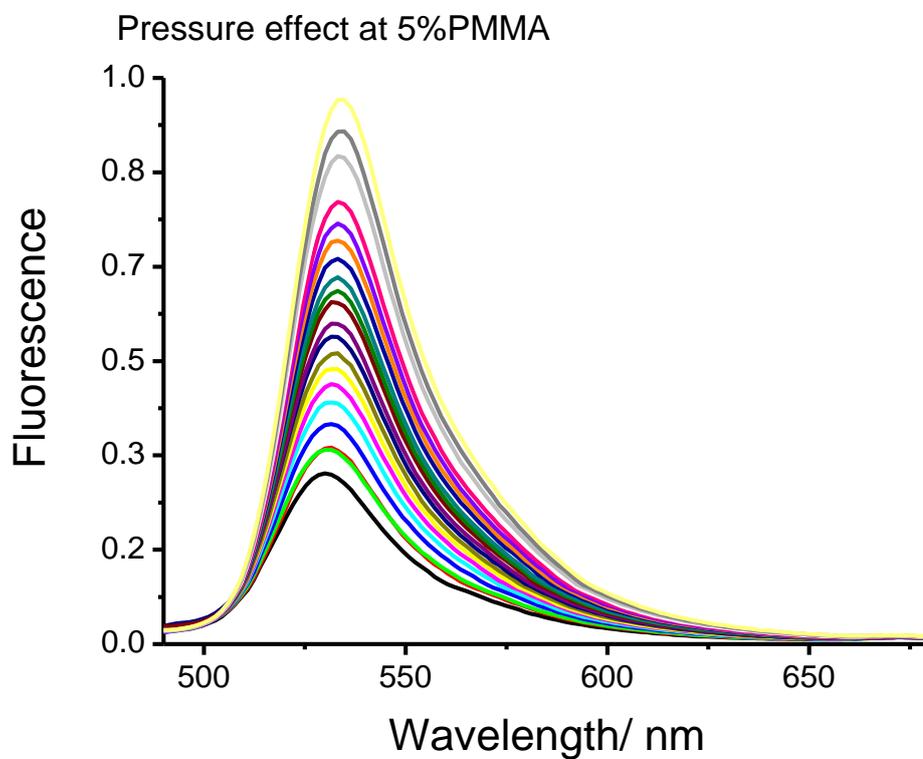
**Figure S2.** Relationship between solution viscosity and the concentration of PMMA expressed as percent mass/volume.



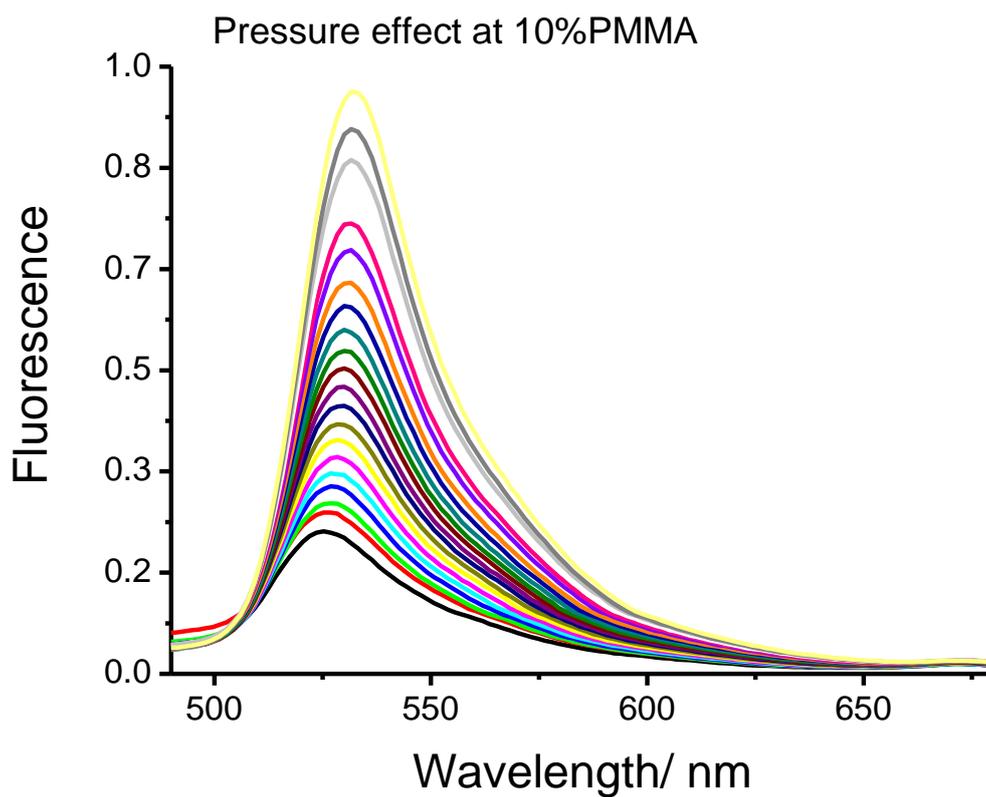
**Figure S3.** Effect of pressure on the shear viscosity of  $\text{CHCl}_3$  at 20 °C.



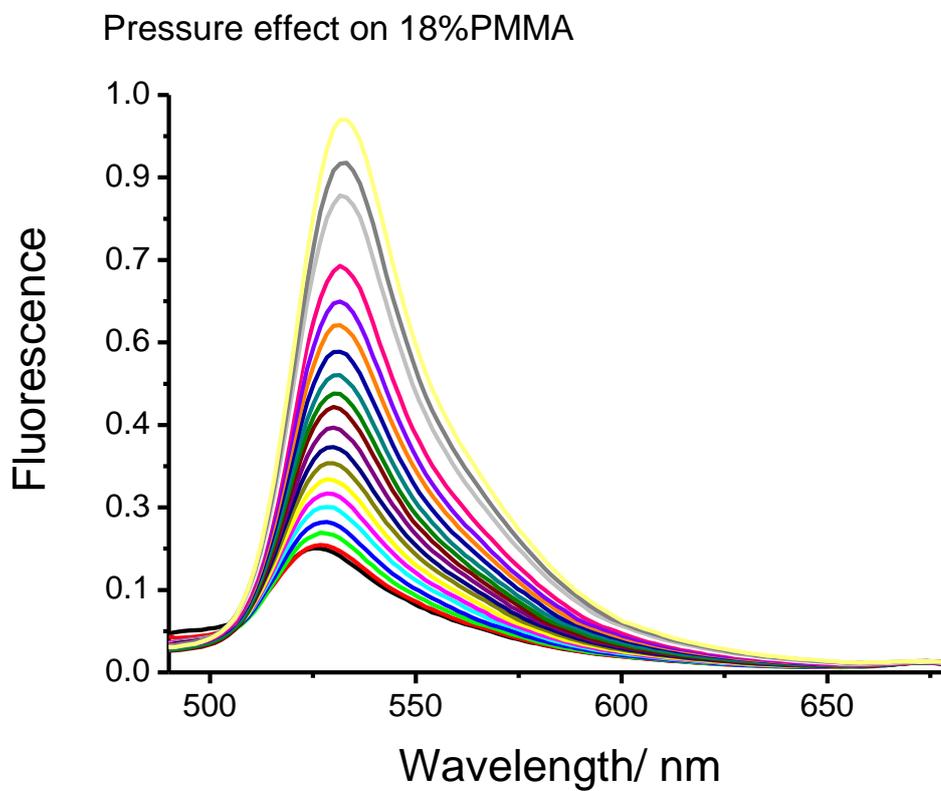
**Figure S4.** Effect of applied pressure on the fluorescence spectrum of ROBOD in CHCl<sub>3</sub> in the presence of 2% m/v PMMA.



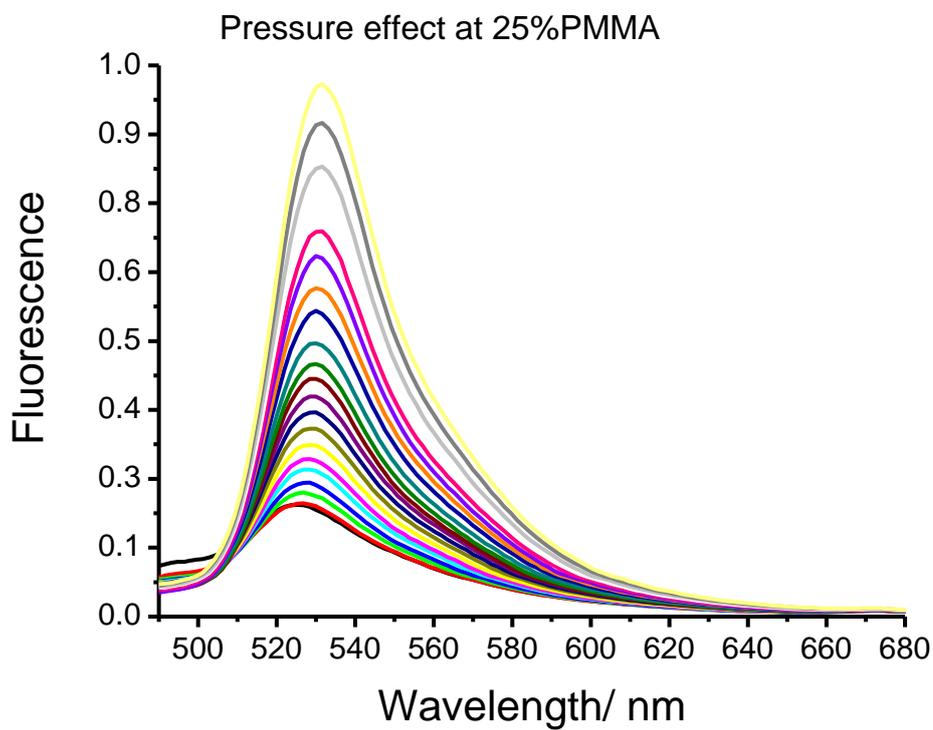
**Figure S5.** Effect of applied pressure on the fluorescence spectrum of ROBOD in CHCl<sub>3</sub> in the presence of 5% m/v PMMA.



**Figure S6.** Effect of applied pressure on the fluorescence spectrum of ROBOD in  $\text{CHCl}_3$  in the presence of 10% m/v PMMA.



**Figure S7.** Effect of applied pressure on the fluorescence spectrum of ROBOD in CHCl<sub>3</sub> in the presence of 18% m/v PMMA.



**Figure S8.** Effect of applied pressure on the fluorescence spectrum of ROBOD in  $\text{CHCl}_3$  in the presence of 25% m/v PMMA.