

Electronic Supplementary Information

**Tunable Multicolor Emissions of Polymeric Ionic Films Carrying Proper
Fluorescent Dye Moieties**

By Satoshi Wakizono, Kazuya Yamamoto, and Jun-ichi Kadokawa*

Synthesis of a polymerizable pyranine derivative (5): Under argon, to a solution of pyranine (0.158 g, 0.301 mmol) in DMF (100 mL) was added triethylamine (0.84 mL, 6.00 mmol) and methacryloyl chloride (0.15 mL, 1.55 mmol) in this order with stirring at 0 °C. After the mixture was stirred at 0 °C for 40 h, the reaction solution was poured into diethyl ether (2000 mL) to precipitate the product. The precipitate was collected by filtration and dissolved in a small amount of DMF. Then, the solution was poured into chloroform to reprecipitate the product. The precipitate was collected by filtration and dried under reduced pressure. The material was dissolved in a small amount of water and the solution was poured into acetone (500 mL). The precipitate was filtered off and filtrate was evaporated and lyophilized to give **5** (0.1423 g, 0.240 mmol) in 79.7 % yield based on pyranine. ¹H NMR (D₂O): δ 2.20 (s, =C-CH₃, 3H), 6.11 (s, =CH₂ (*cis* to -CH₃), 1H), 6.67 (s, =CH₂ (*trans* to -CH₃), 1H), 8.46 (d, *J* = 9.6 Hz, PyreneH, 1H), 8.58 (s, PyreneH, 1H), 9.10 (d, *J* = 9.6 Hz, PyreneH, 1H), 9.16 (d, *J* = 10.1 Hz, PyreneH, 1H), 9.23 (d, *J* = 10.0 Hz, PyreneH, 1H), 9.24 (s, PyreneH, 1H).