Supporting Information

Gel electrolyte materials formed from a series of novel low molecular mass organogelators for stable quasi-solid-state dye-sensitized solar cells

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Synthesis of didodecanoylamides of α,ω-alkylidenediamines

N,N'-1,2-ethanediylbis-dodecanamide (gelator A)

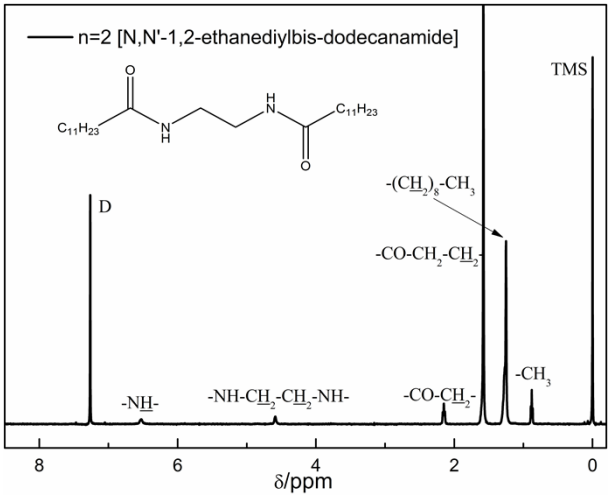

Fig.S1 ^{1}H NMR chemical shifts of gelator A in Chloroform-*d*

Lauroylchloride (0.14 mol) was added to a stirred solution of $NaHCO_3$ (0.13 mol) in a mixture of ether (150 mL) and water (150 mL) at 0 °C. Then, ethylenediamine (0.044 mol) was added dropwise to the above mixture during 20 min at 0 °C. The suspension was stirred at room temperature for 8 h. The resulting solid was filtrated and washed with water three times. Drying in vacuo gave a solid (15.8 g). After recrystallization from ethanol (500 mL), the production

was obtained (12.1 g, 70%) as colorless leaflets. Anal: Calcd. For: $C_{26}H_{52}N_2O_2$ (gelator A): C 73.53, H 12.34, N 6.60. Found: C 73.34, H 12.63, N 6.54.

***N,N'*-1,6-hexanediylbis-dodecanamide (gelator B)**

The synthesis procedure is same to that of gelator A with lauroylchloride (0.14 mol), $NaHCO_3$ (0.13 mol), ether (150 mL), water (150 mL), 1,6-Hexylenediamime (0.044 mol). The production was obtained (15 g, 80%) as colorless leaflets. Anal: Calcd. For: $C_{30}H_{60}N_2O_2$ (gelator B): C 74.94; H 12.58; N 5.83. Found: C 75.30; H 12.46; N 5.94.

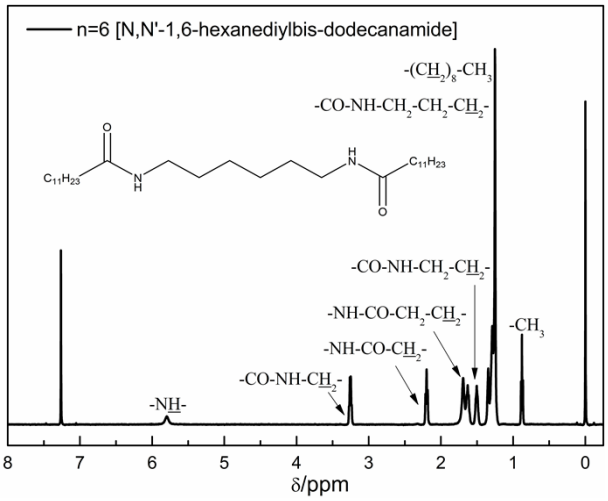

Fig. S2 ^{1}H NMR chemical shifts of gelator B in Chloroform-*d*

***N,N'*-1,5-pentanediylbis-dodecanamide (gelator C)**

The synthesis procedure is same to that of gelator A with lauroylchloride (0.14 mol), $NaHCO_3$ (0.13 mol), ether (150 mL), water (150 mL), 1,5-Diaminopentane (0.044 mol). The production was obtained (16 g, 79%) as colorless leaflets. Anal: Calcd. For: $C_{29}H_{58}N_2O_2$ (gelator C): C 74.62; H 12.52; N 6.00. Found: C 74.69; H 12.37; N 6.24.

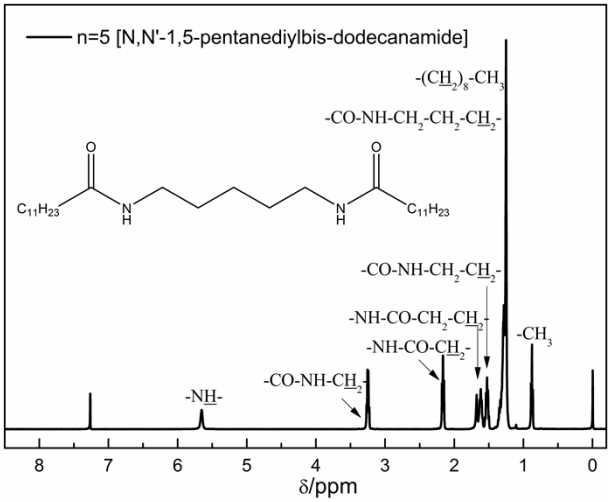

Fig. S3 ^{1}H NMR chemical shifts of gelator C in Chloroform-*d*

***N,N'*-1,9-nonanediylbis-dodecanamide (gelator D)**

The synthesis procedure is same to that of gelator A with lauroylchloride (0.14 mol), $NaHCO_3$ (0.13 mol), ether (150 mL), water (150 mL), 1,9-Diaminononane (0.044 mol). The production was obtained (13 g, 70%) as colorless leaflets. Anal: Calcd. For:$C_{33}H_{66}N_2O_2$ (gelator D): C 75.80; H 12.72; N 5.36. Found: C 76.36; H 12.69; N 5.43.

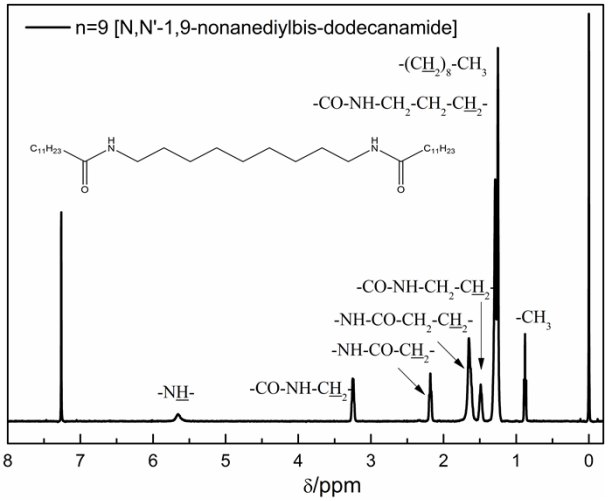

Fig. S4 ^1H NMR chemical shifts of gelator D in Chloroform-*d*