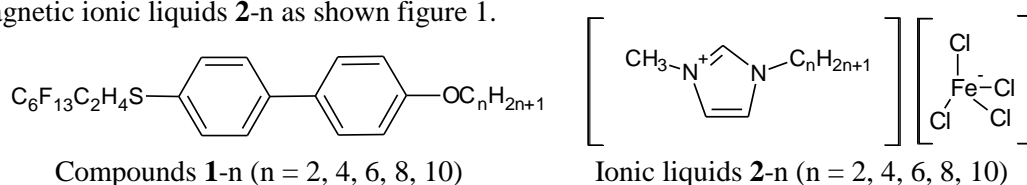


## Evaluation of Magnetic Ionic Liquid Gel Properties Formed by Fluorine-Containing Low Molecular Weight Gelators Having Linear Alkyl Group at Terminal Position

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In our previous work, it was found that some low molecular weight compounds having perfluoroalkyl group at terminal position were able to gelate by dissolved and cooling. In this work, biphenyl derivatives having perfluoroalkyl and linear alkyl group at terminal positions were synthesized (compounds **1-n**) and also examined gelation ability in some magnetic ionic liquids **2-n** as shown figure 1.



**Figure 1** Chemical structures of compounds **1-n** and ionic liquids **2-n**

In table 1, their gelation abilities examined in ionic liquid **2-n** and confirmed that magnetic ionic liquids were able to gelated by compounds **1-n** added in an amount of 1.0wt% or less.

**Table 1** Critical gel concentration in ionic liquids **2-n**

Ionic liquids	Compounds (concentration/wt%)				
	<b>1-2</b>	<b>1-4</b>	<b>1-6</b>	<b>1-8</b>	<b>1-10</b>
<b>2-2</b>	G (0.6)	G (0.5)	G (0.8)	G (0.6)	G (0.6)
<b>2-4</b>	G (0.3)	G (0.2)	G (0.3)	G (0.4)	G (0.2)
<b>2-6</b>	G (0.3)	G (0.1)	G (0.2)	G (0.4)	G (0.3)
<b>2-8</b>	G (0.2)	G (0.1)	G (0.1)	G (0.6)	G (0.4)
<b>2-10</b>	G (0.6)	G (0.6)	G (0.4)	G (0.8)	G (0.5)

S = Sol, G = Gel, ( ) = wt%

In this presentation, sol-gel transition temperatures of magnetic ionic liquid gels will be reported. In addition, effect of gel properties by elongation of terminal alkyl chain of compounds **1-n** and ionic liquids **2-n** will be discussed.

Reference: M. Miura *et al.*, *ECS Transactions*, **50**, 89 (2013)