Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supporting Information

Diazopyridine-Ni(II) Complexes Exhibiting Intra-Chain Ferromagnetic Interaction After Irradiation: Formation of Magnetic Gel

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Table 1. Crystallographic data collection and structural refinement information for **3**.

	3
empirical formula	$C_{52}H_{62}F_{12}N_6O_4Ni$
formula weight	1121.78
crystal system	Monoclinic
space group	$P2_1/c$ (no. 14)
a / Å	11.0039(6)
b / Å	45.083(3)
c / Å	11.3568(4)
β / °	105.098(4)
V / Å^3	5439.5(5)
μ / cm^{-1}	1.303
Z (Z')	4 (1)
crystal size / mm	0.80 x 0.80 x 0.3
D_{calc} / gcm^{-3}	1.370
F(000)	2336.00
radiation	CuKα
T / K	123
no. reflections measured	52833
no. unique reflections	9928
no. parameters	677
R_1 ($I > 2\sigma(I)$)[a]	0.0762
wR_2 (all data)[a]	0.1895
GOF	1.022

[a] $R_1 = \Sigma \, ||F_0|-|F_c|| \, / \, \Sigma \, |F_0|$; $wR_2 = \{\Sigma \, w(F_0^2-F_c^2)^2 \, / \, \Sigma \, w(F_0^2)^2\}^{1/2}$

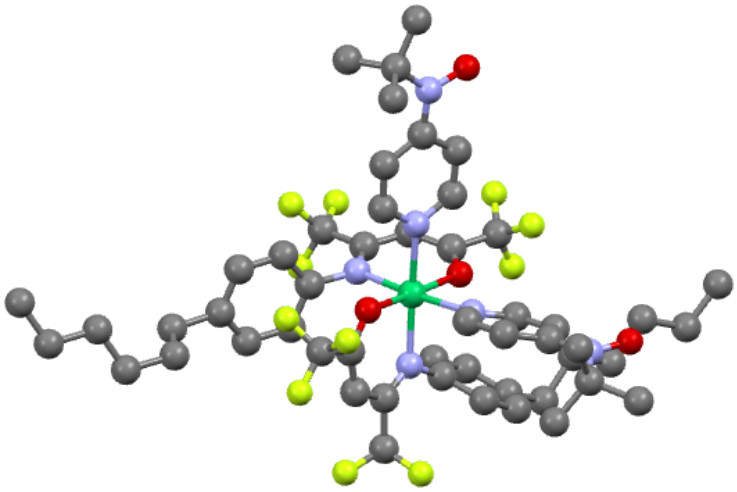


Figure S1. Molecular structures of **3**. Hydrogen atoms are omitted for sake of clarity. Color code; Ni (green), N (blue), O (red), F (yellow), and C (gray), respectively.

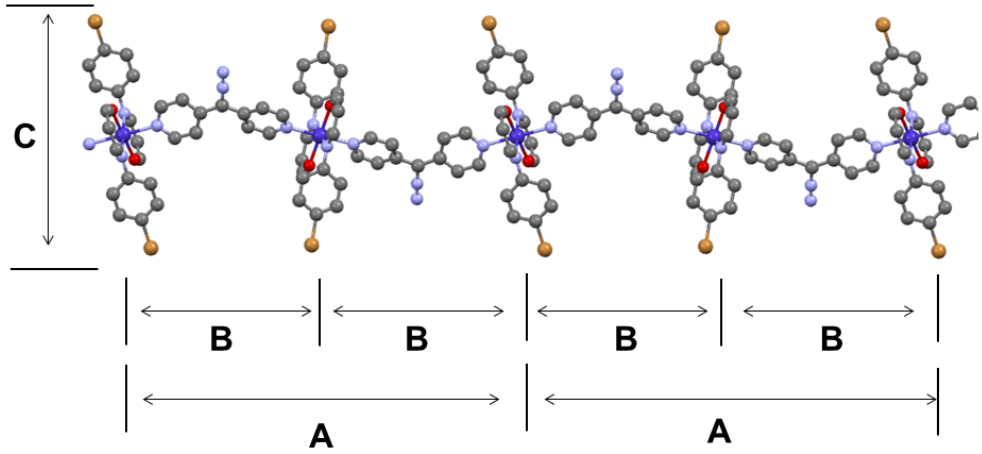


Figure S1'. The chain structure of **[Co(Br-hfpip)$_2$D1py$_2$]**$_n$ reported previously.[1] Capital letters of A, B, and C, represent the distances of one pitch (A), one unit (B), and the width of the chain, respectively. CF_3 groups and H atoms are omitted for a sake of clarity.

[1] S. Karasawa, N. Koga *Inorg. Chem*. **2011**, *50*, 2055.

S3.

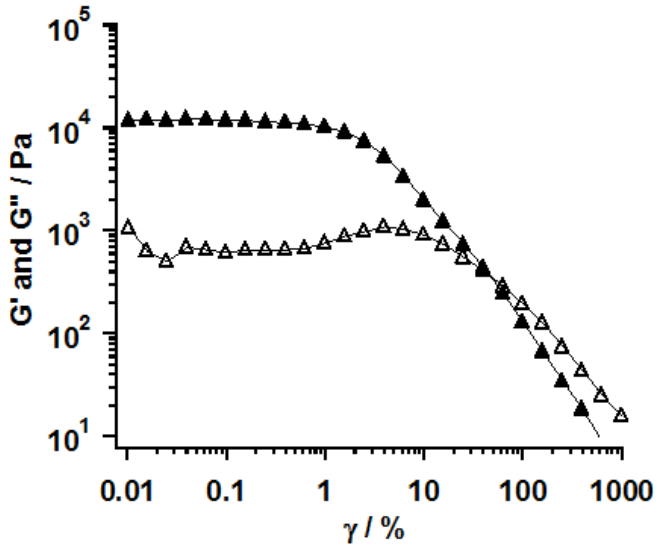


Figure S2. Strain dependence of *G*' and *G*" for the gel of **2** (entry 16 in Table 2).

S4.

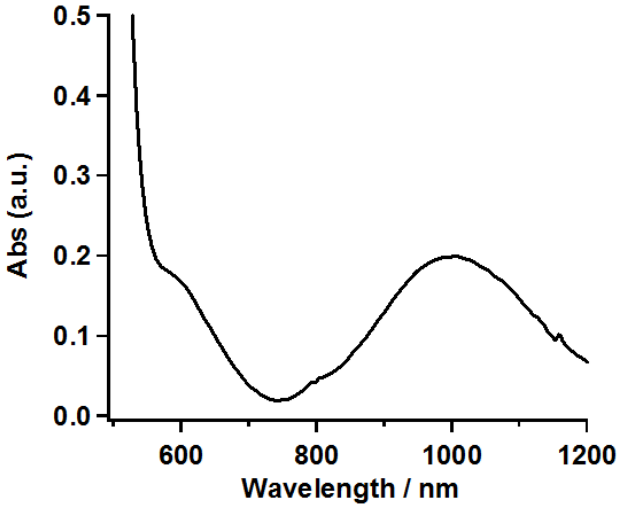
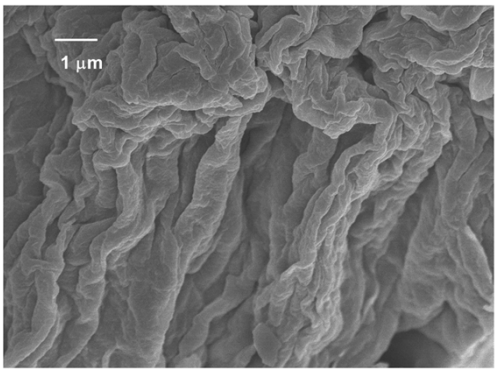


Figure S3. Absorption spectrum of **1** in 15 mM MTHF solution sample.

S5.

(a)



(b)

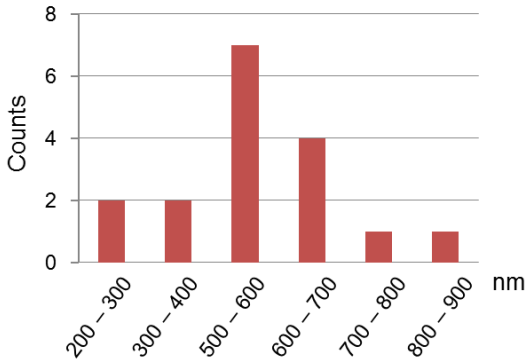
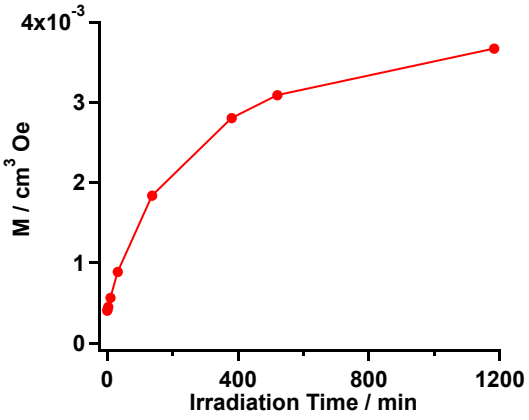


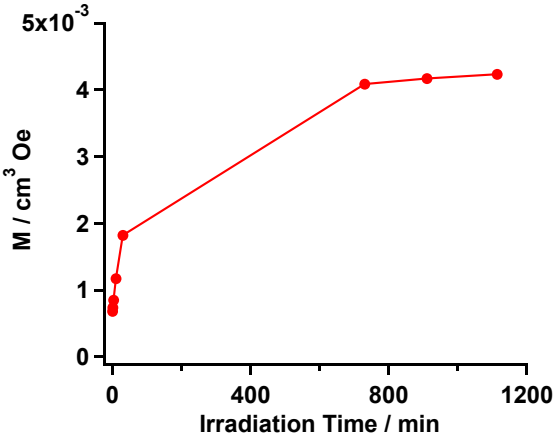
Figure S4. (a) SEM image of xerogel for **1**. (b) Counts vs width plot of the fiber in left image.

S6.

(a)



(b)



(c)

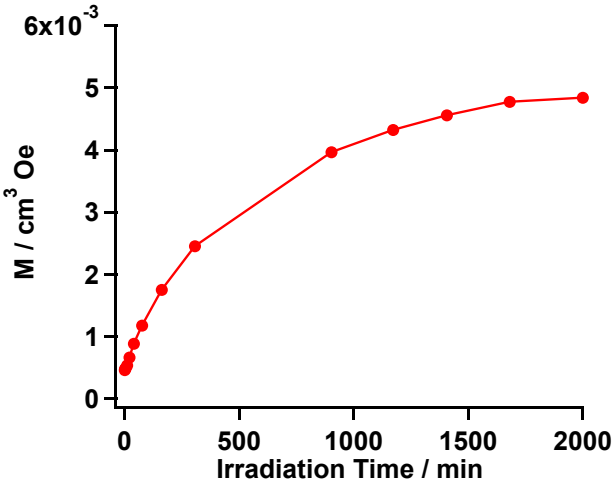


Figure S5. *M* vs *Irradiation* plots of **1**. Samples of the powder (a), 15 mM MTHF solution (b), and the gel (c).

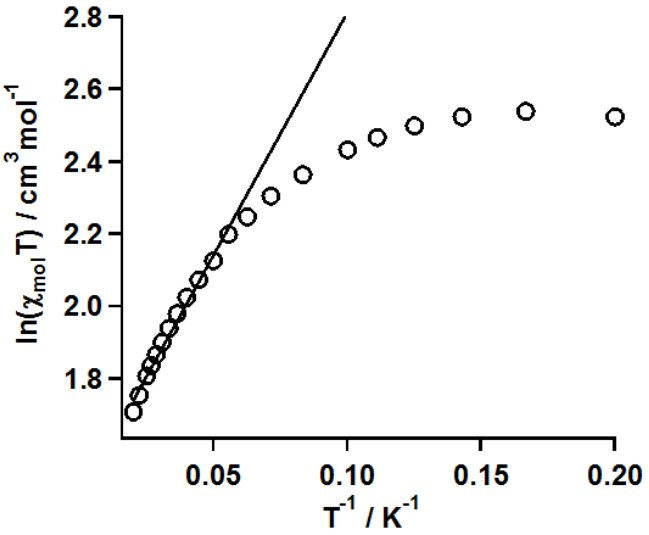


Figure S6. ln($\chi_{mol}T$) vs T plot of the gel sample of **1** after irradiation. The solid line is the fitting the data from 50 – 15 K.