

Supporting Information

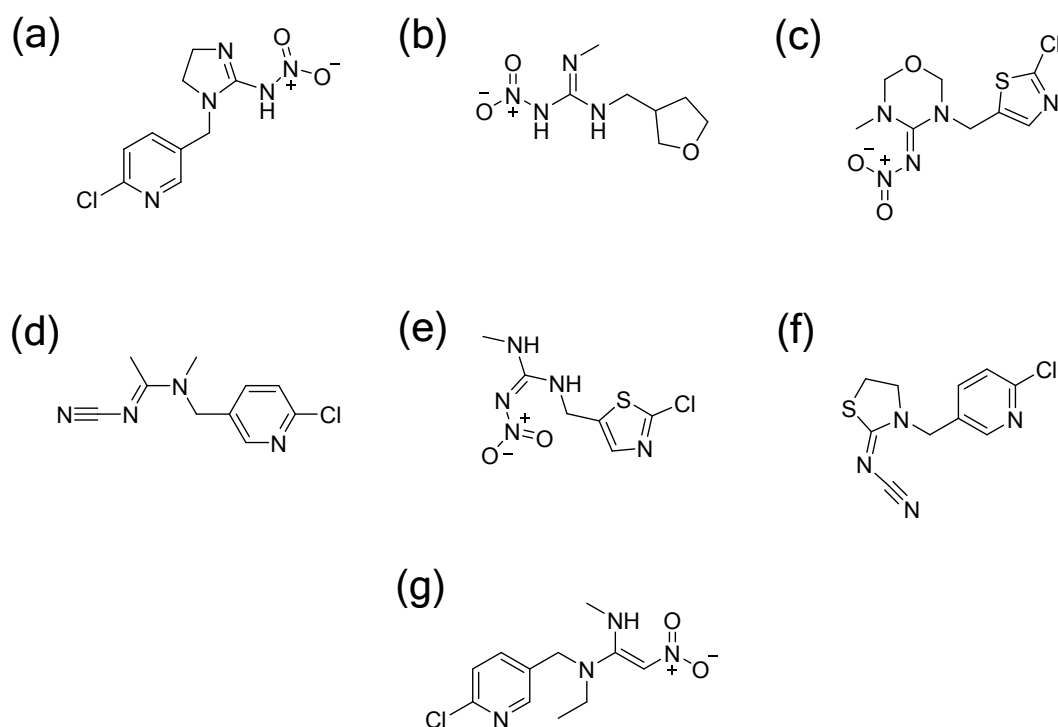
Effective nitenpyram detection in a dual-walled nitrogen-rich In(III)/Tb(III)-organic framework

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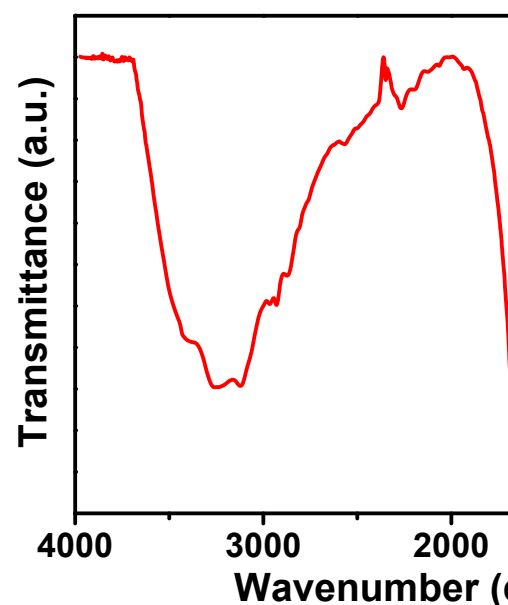
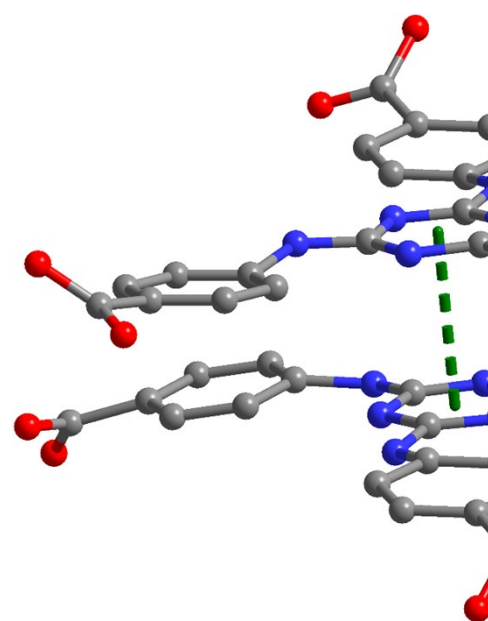
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Scheme S1 Structure of pesticides used in the text: (a) Imidacloprid, (b) Dinotefuran, (c) Thiamethoxam, (d) Acetamiprid, (e) Clothianidin, (f) Thiacloprid, and (g) Nitenpyram.

Table S1 Crystal data and structure refinement for **1**.

Empirical formula	C ₃₂ H ₂₄ InN ₈ O ₁₁ Tb
Formula weight	970.33
Temperature/K	293(2)
Crystal system	cubic
Space group	Im $\bar{3}$
a/Å	27.8448(3)
b/Å	27.8448(3)
c/Å	27.8448(3)
α /°	90
β /°	90
γ /°	90
V/Å ³	21589.0(7)
Z	24
ρ_{calc} /cm ³	0.896
μ /mm ⁻¹	1.330
F(000)	5688
Radiation	MoK α (λ = 0.71073)
Reflections collected	15928
Independent reflections	3722 [R_{int} = 0.0325]
Data/restraints/parameters	3722/279/203
GOF on F ²	1.077
Final R indexes [$I \geq 2\sigma(I)$]	$R_1 = 0.0461$, $wR_2 = 0.1240$
Final R indexes [all data]	$R_1 = 0.0571$, $wR_2 = 0.1380$
Largest diff. peak/hole / e Å ⁻³	1.65/-0.64

**Fig. S1** IR spectra for as-synthesized of **1**.**Fig. S2** The presence of π - π interactions between the phenyl rings of the ligands.

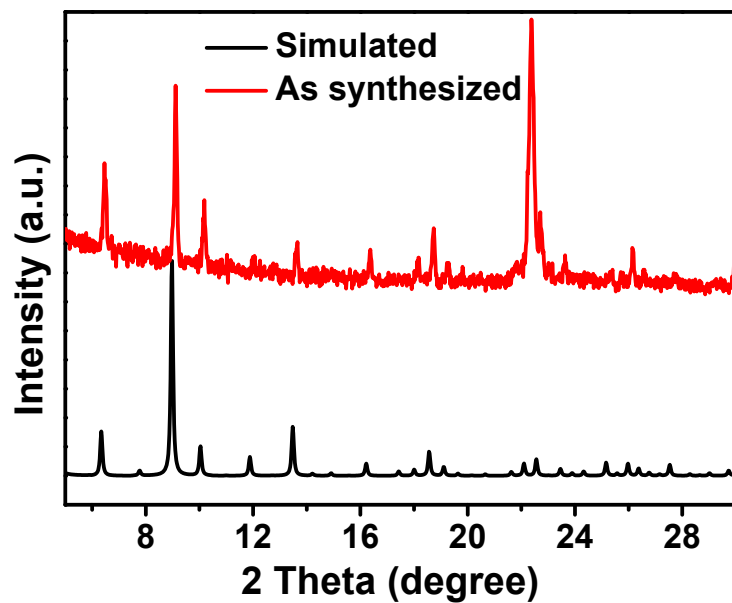


Fig. S3 PXRD patterns of **1** simulated from the single-crystal structure and as-synthesized sample.

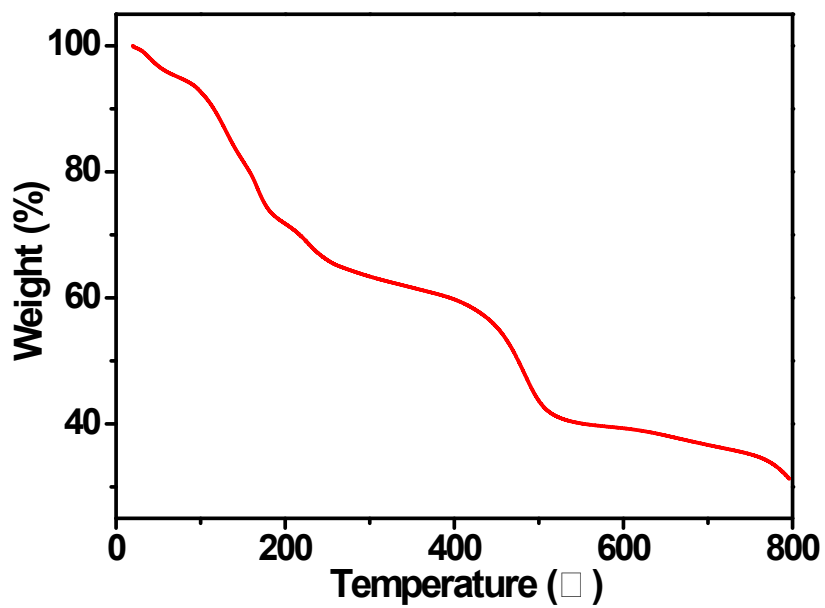


Fig. S4 TGA curve for as-synthesized sample of **1**.

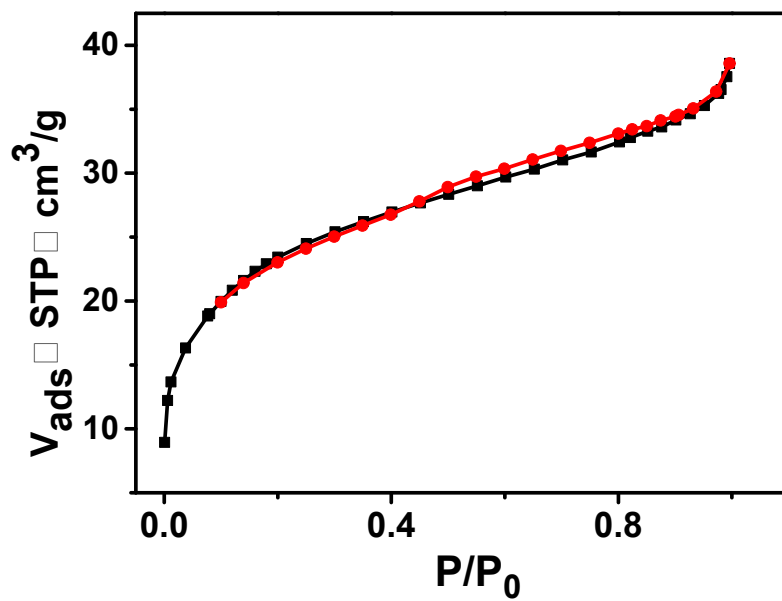


Fig. S5 N_2 sorption isotherm of 1 at 77 K under 1 atm.

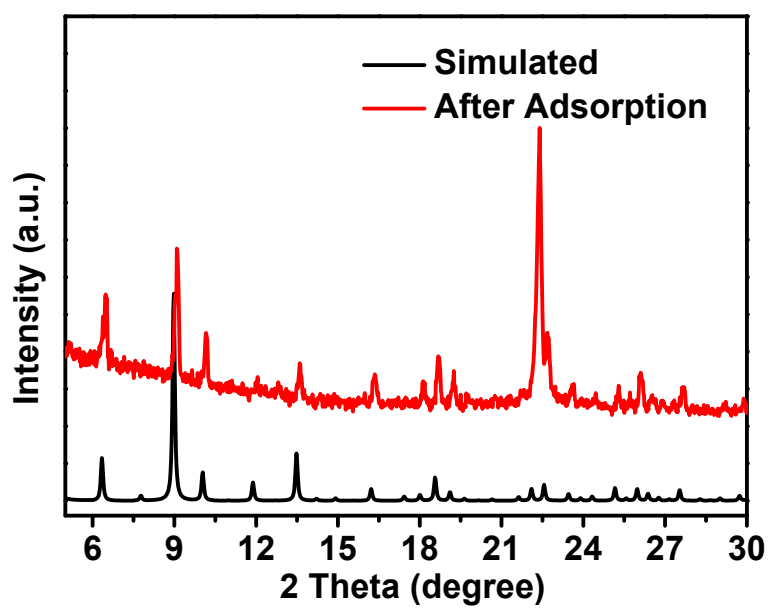


Fig. S6 PXRD pattern after N_2 sorption for 1.

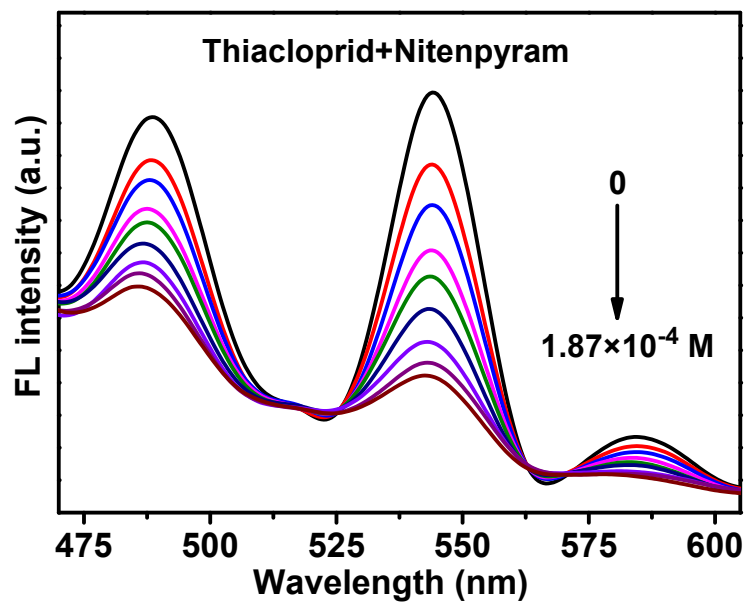


Fig. S7 In the existence of thiacloprid, luminescence intensity of **1** under different concentrations of nitenpyram.

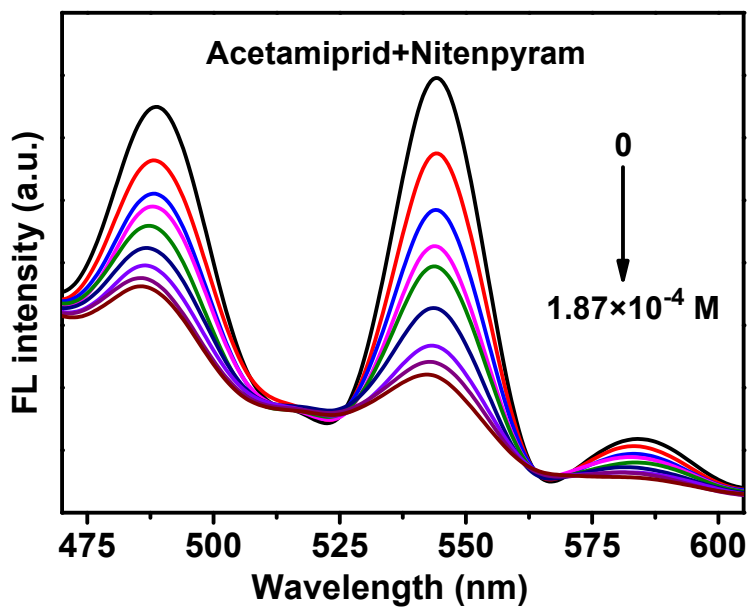


Fig. S8 In the existence of acetamiprid, luminescence intensity of **1** under different concentrations of nitenpyram.

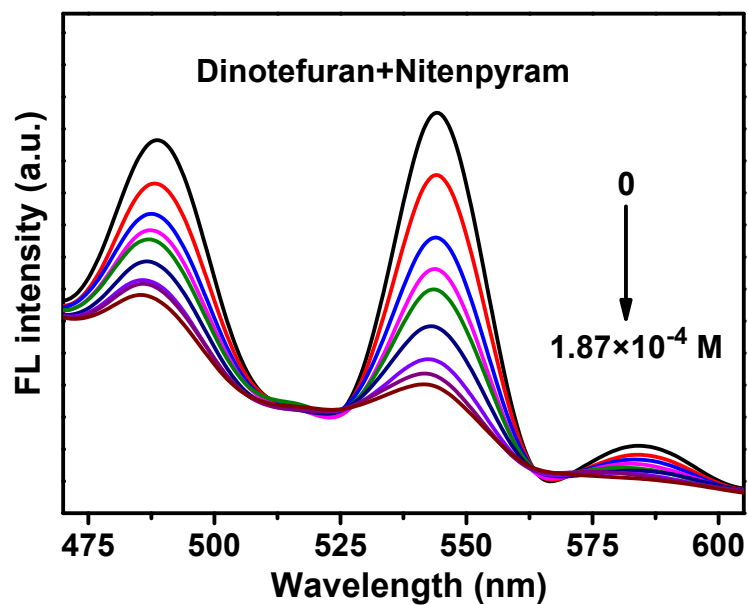


Fig. S9 In the existence of dinotefuran, luminescence intensity of **1** under different concentrations of nitenpyram.

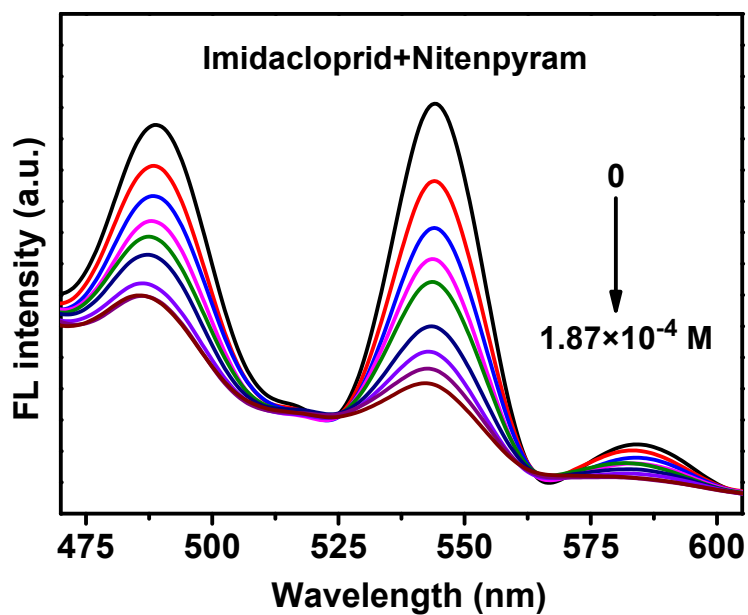


Fig. S10 In the existence of imidacloprid exists, luminescence intensity of **1** under different concentrations of nitenpyram.

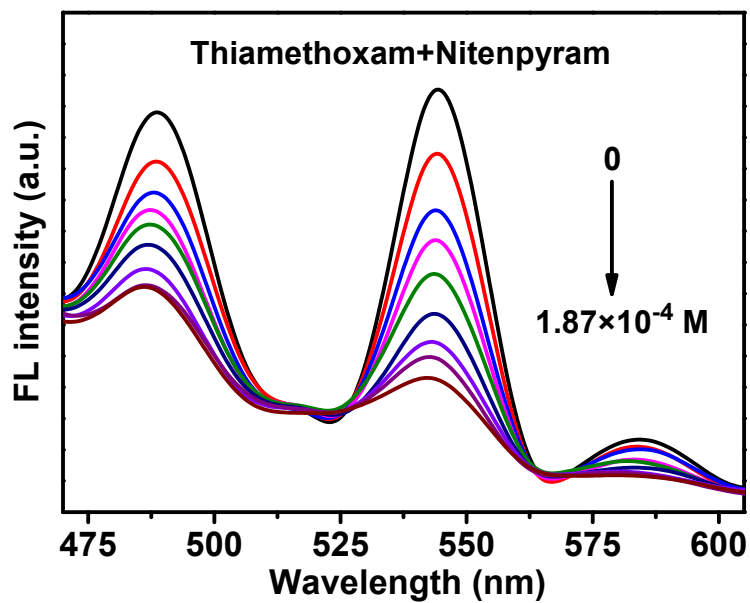


Fig. S11 In the existence of thiamethoxam, luminescence intensity of **1** under different concentrations of nitenpyram.

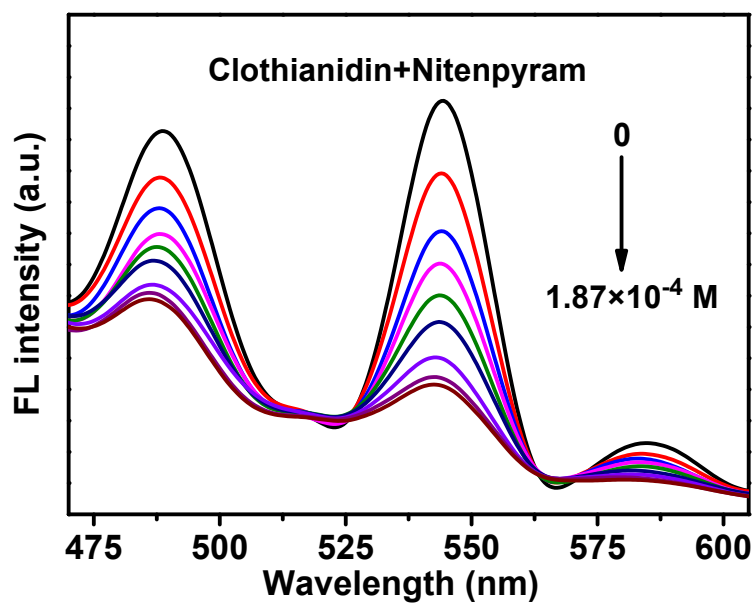


Fig. S12 In the existence of clothianidin, luminescence intensity of **1** under different concentrations of nitenpyram.

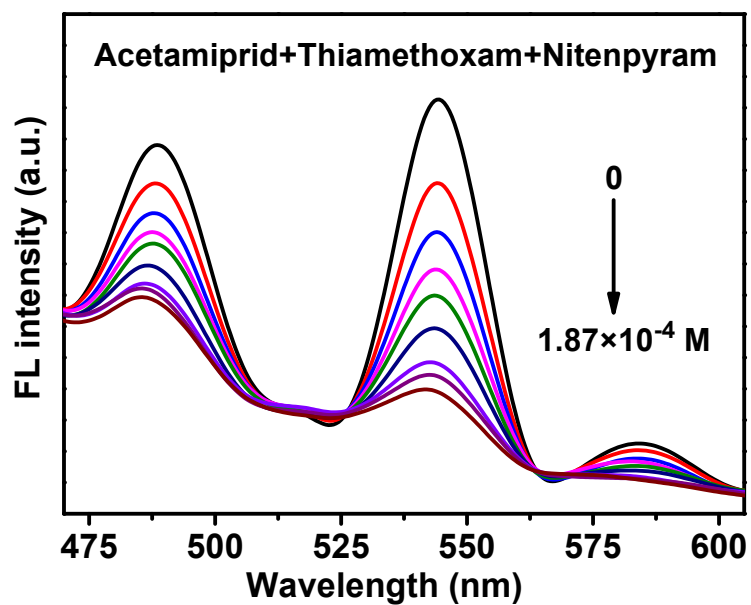


Fig. S13 In the existence of acetamidrid and thiamethoxam, luminescence intensity of **1** under different concentrations of nitenpyram.

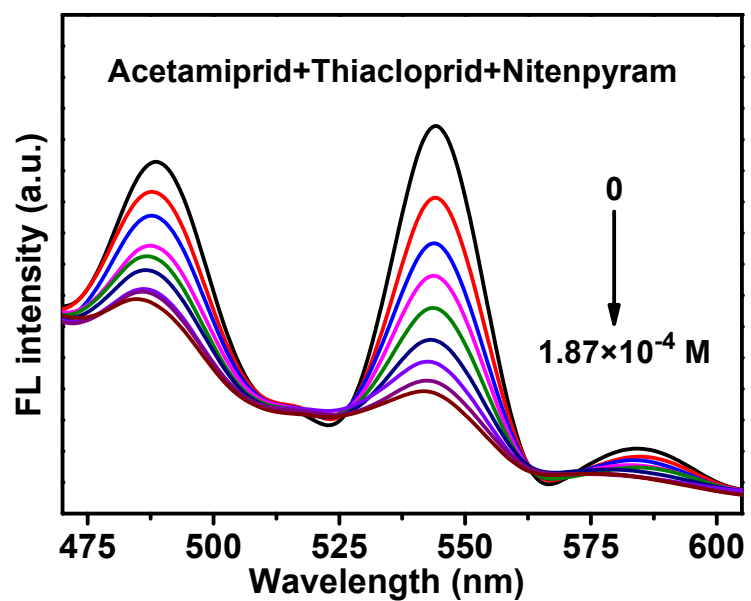


Fig. S14 In the existence of acetamidrid and thiacloprid, luminescence intensity of **1** under different concentrations of nitenpyram.