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Research paper

A highly sensitive and selective novel fluorescent chemosensor for detection of  $\text{Cr}^{3+}$  based on a Schiff base

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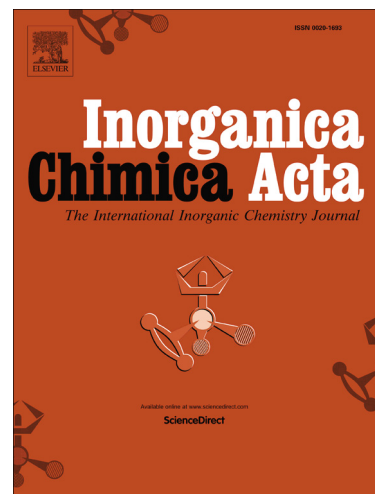
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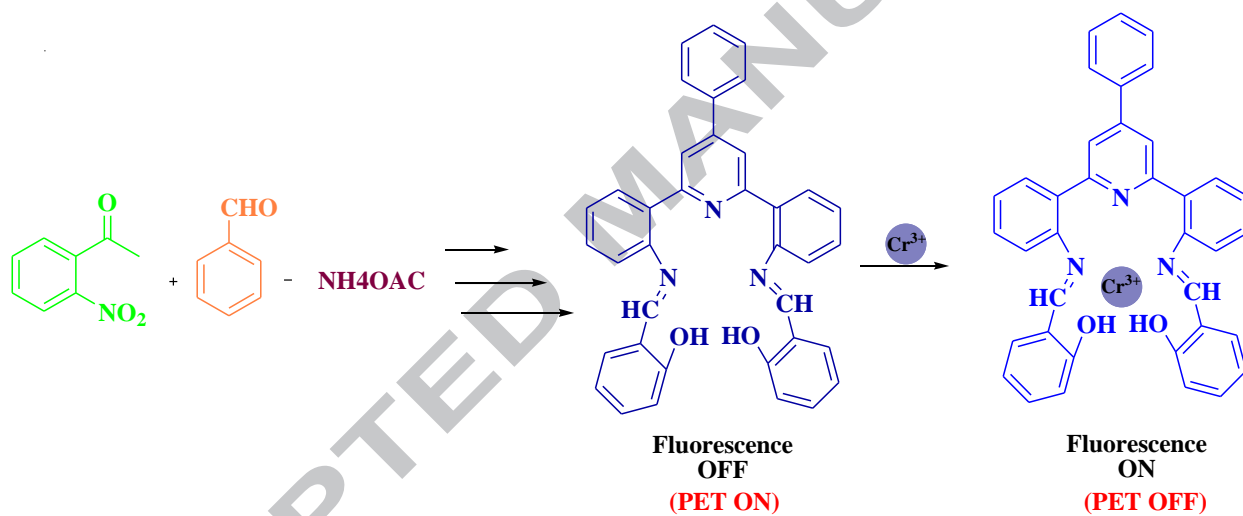
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### Graphical Abstract



### Highlights

- Synthesis of efficient Schiff base (**3**) as a  $\text{Cr}^{3+}$  ion fluorescence detector.
- Theoretical study together with Job's plot method showed 1:1 binding ratio of  $\text{Cr}^{3+}$  with Schiff base **3**.
- The sensing mechanism are explained by photoinduced electron transfer (PET) and chelation-enhanced fluorescence (CHEF).
- It has high affinity ( $K_a = 8.77 \times 10^4 \text{ M}^{-1}$ ) and selectivity for  $\text{Cr}^{3+}$ .

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