Syrian Arab Republic
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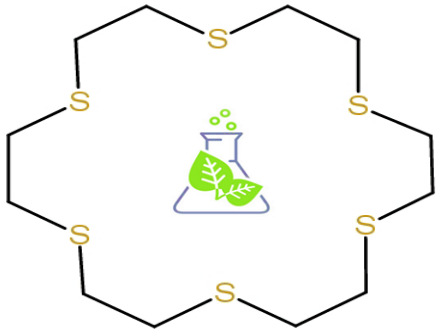


Precious Metal Ions Extraction Processes Using Selective Hosts

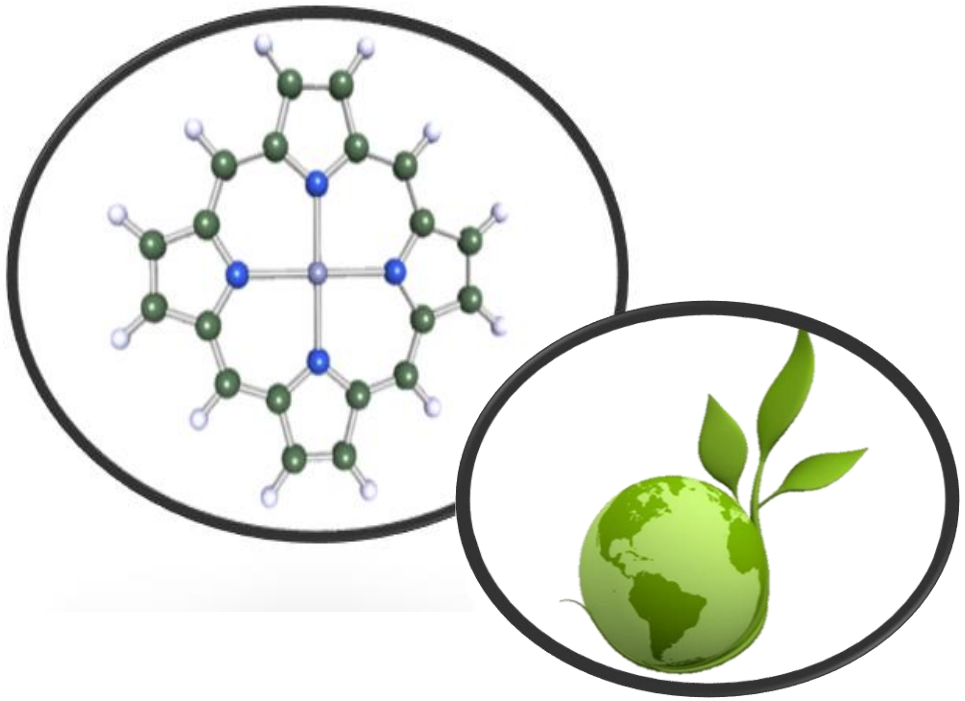
By Batoul Massoud

The 21th Kolmogorov Readings International Scientific School Conference
3-6 May 2021

Introduction

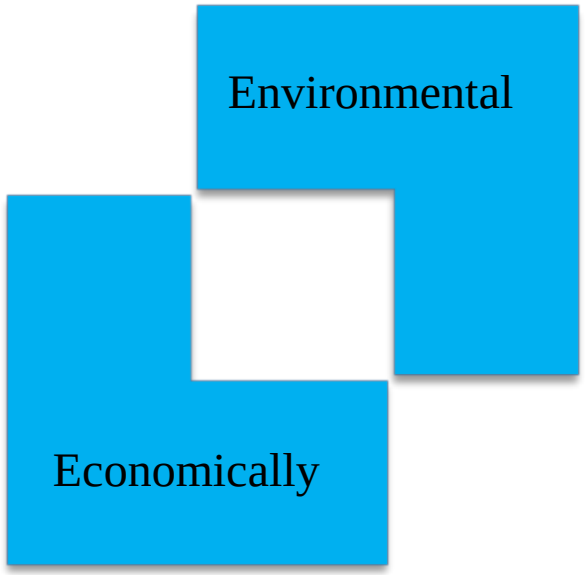
- The importance of metal ions extraction processes is increasing rapidly.

- Chemical methods are one of the highest economic into the commercial society.



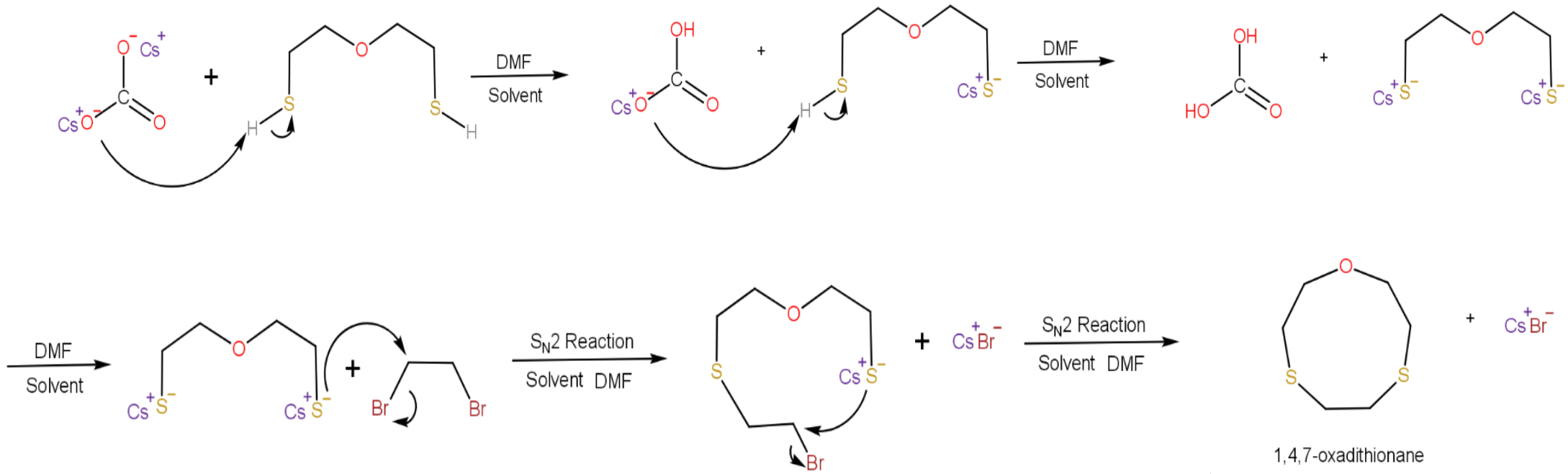
The Goal of this research

Based on the increasing importance of the research in this area, this paper aims to investigate three heterocyclic compounds that can form stable complexes with precious metal ions to extract them from their aqua solutions.



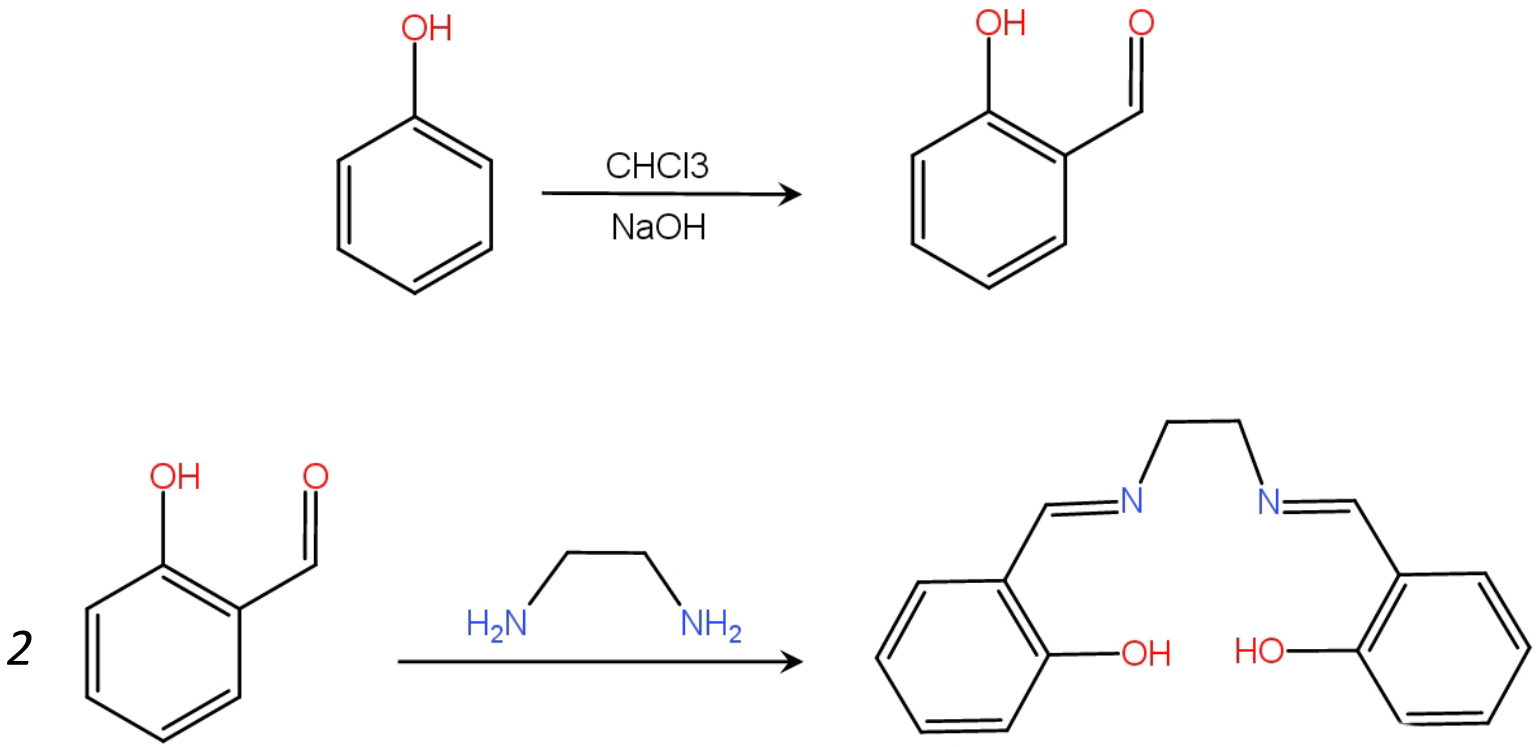
Materials and Methods

Synthesis of 1,4,7-Oxadithionane



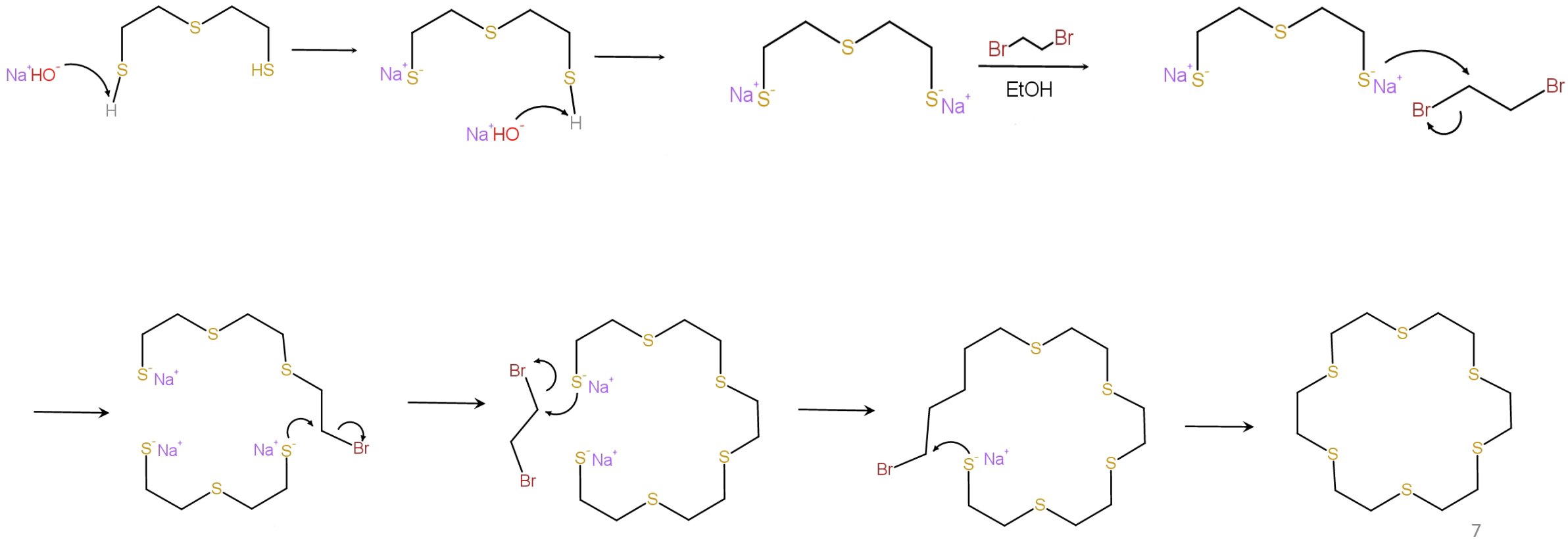
Materials and Methods

Synthesis of N,N'-bis(salicylaldehyde)ethylenediamine

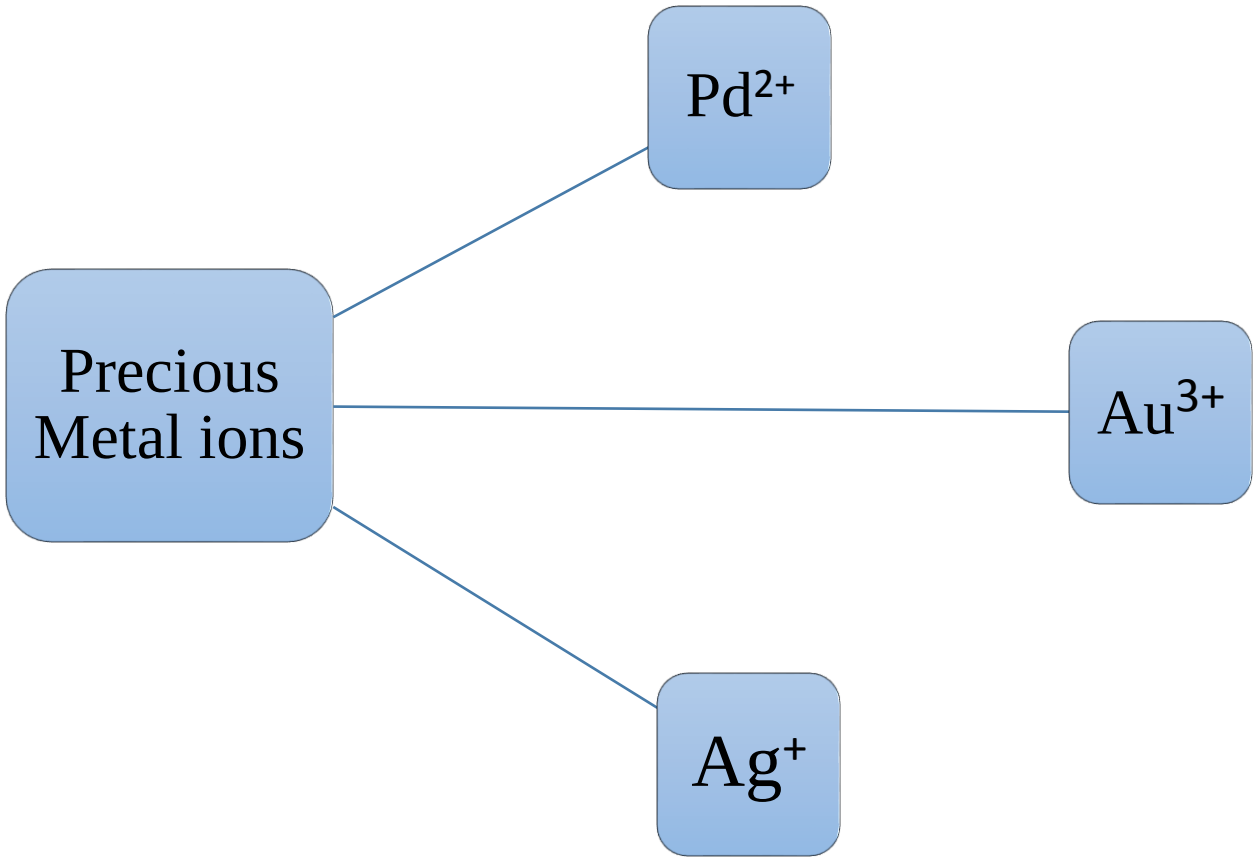


Materials and Methods

1,4,7,10,13,16-Hexathiaoctadecane



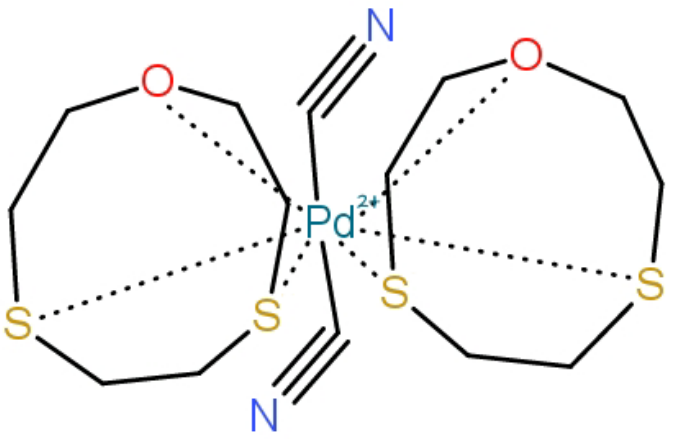
Materials and Methods



Materials and Methods

Precious Metal ions

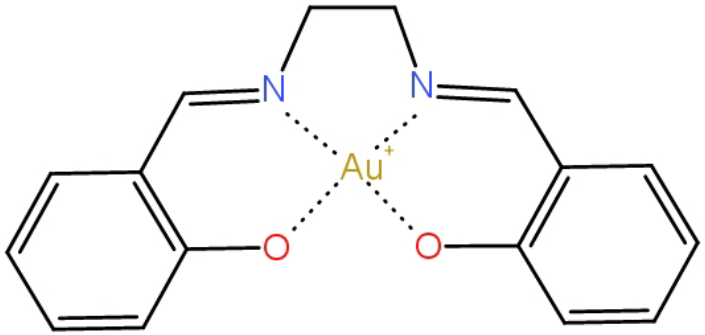
Pd^{2+}



Materials and Methods

Precious Metal ions

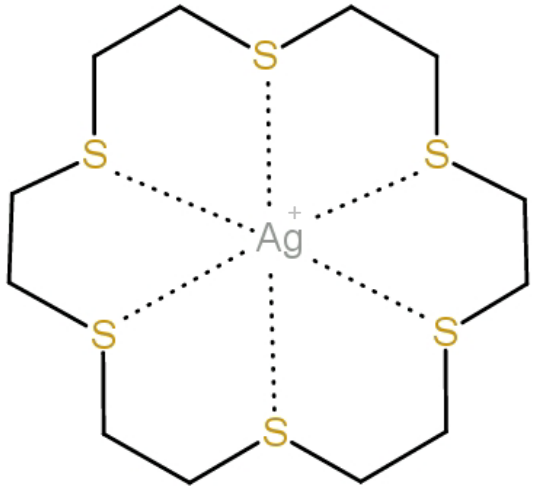
Au^{3+}



Materials and Methods

Precious Metal ions

Ag^+



Results and Discussion

- Metal solutions can be prepared by treating the e-wastes.
- The following methods are considered economic when compared with the profit we get from precious metals.
- The less costly way to recover the metals from their complexes is achieved by the electrochemical processes.

Results and Discussion

- The Synthesized of these three compounds is mainly low in cost and environmentally suitable to be expired under the labs maintained conditions.
- The Au metal in aqua regia can be recovered by complexing process with the condensation product of ethylenediamine and salicylaldehyde.
- Obtaining metals from its secondary sources is an ideal process in order to conserve our environment and reduce the pollution around us.

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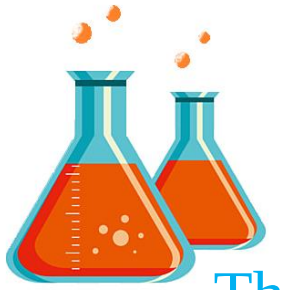

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