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Effects of Ag<sub>2</sub>O nanoparticles addition on electrical conductivity and microhardness properties of polycrystalline YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7- $\delta$ </sub>

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#### ACCEPTED MANUSCRIPT

## Highlights

- The Ag<sub>2</sub>O and YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> nanoparticles are mixed via solid state reaction.
- The Ag has incorporated in  $YBa_2Cu_3O_{7-\delta}$  structure for samples with > 3.0 wt. %  $Ag_2O$ .
- Additions of Ag<sub>2</sub>O has improved the RT electrical conductivity of the samples.
- $T_C$  of the  $\leq$  3.0 wt. % Ag<sub>2</sub>O added samples is slightly exceeded the pure YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7- $\delta$ </sub>.
- Microhardness of the samples is reduced due to agglomeration of Ag<sub>2</sub>O.



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