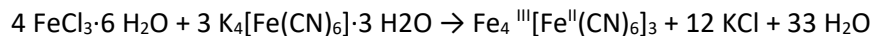


1. Preparation of the Prussian blue pigment.



Weight 1 mmol of $\text{K}_4[\text{Fe}(\text{CN})_6] \cdot 3 \text{H}_2\text{O}$ and the related amount of $\text{FeCl}_3 \cdot 6 \text{H}_2\text{O}$.

Put the reagents in a mortar and manually grind with a pestle in neat grinding (NG) conditions.

Take then the reagents and place them in another mortar with the addition of a drop of water in order to work in liquid assisted grinding (LAG) conditions.

Repeat the procedure by using a different solvent.

2. Preparation of the co-crystal ibuprofen-nicotinamide as a new pharmaceutical formulation.

Place ibuprofen (75.38 mg) and nicotinamide (44.62 mg) in a 1:1 stoichiometric ratio in a milling jar in the presence of a 10 mm steel milling ball and run the reaction for 30 minutes at 50 Hz.

Perform the characterization via PXRD and thermal analysis.

3. Mechanochemical recycling of polyethylene terephthalate (PET).

Materials:

$m(\text{PET}) = 106.6 \text{ mg}$

$m(\text{NaOH}) = 44.4 \text{ mg}$

$V(\text{H}_2\text{O}) = 100 \mu\text{L}$

Put the reagents in a milling jar in the presence of an 8 mm steel ball. Run the reaction for 2 h at 50 Hz and then dry the sample for 1 h at 60 °C.

Perform the characterization via PXRD.