

Aqueous v. Interfacial Routes of Polyaniline

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Purpose: The polyaniline synthesis presented compares the interfacial synthetic approach to the aqueous approach.

Procedure: Polyaniline (PANI) was synthesized using four different concentrations of aniline. Aniline was diluted in hydrochloric acid (HCl) through the aqueous route, and was diluted with methylene chloride through the interfacial route. Ammonium persulfate/peroxydisulfate (APS) was diluted with HCl in both synthetic routes. Both solutions were combined in a total of eight vials, four for each synthesis. In the aqueous route, the aniline and APS solutions mixed in a vial, while in the interfacial synthesis, the two solutions were separated. The aniline was at the bottom half of the vial while APS solution was at the top half. Polyaniline produced through both syntheses were filtered through centrifugal filtration. **Conclusion:** Polyaniline synthesized through the interfacial route were characterized through TEM imaging. The sample that consisted of the lowest concentration of aniline produced a thinner and longer polyaniline chain, whereas the sample with the highest concentration of aniline made a thicker and shorter chain. Increased concentrations of pure aniline resulted in more product and a faster chemical reaction.