

Pengaruh komposisi poly vinyl pyrrolidone (PVP) pada sintesis silver nanowire (AgNW) melalui metode polyol = The Effect of poly vinyl pyrrolidone (PVP) composition on silver nanowire (AgNW) synthesis through polyol method

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Abstrak

ABSTRAK

Berbagai penelitian mengenai optimasi silver nanowire AgNW terus dilakukan untuk pengembangan kertas transparan konduktif sebagai pengganti kaca ITO, yang diaplikasikan pada perangkat elektronik, khususnya sel surya. Pada penelitian ini, AgNW disintesis menggunakan metode Polyol dengan variasi rasio molaritas PVP/AgNO₃ 1, 3, 6, dan 8 yang ditujukan untuk mengetahui rasio optimal terhadap pembentukan AgNW. Selain itu, komparasi penggunaan capping agent PVP dan PVA juga dilakukan pada rasio molaritas optimal PVP. Hasil penelitian menunjukkan bahwa rasio molaritas 6 merupakan rasio optimal pada sintesis AgNW menggunakan PVP, terbukti dari morfologi yang berbentuk wire, dan nilai konduktivitas sebesar 13 S.

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<i>ABSTRACT</i>

Many researches about silver nanowire have been done to optimize transparent conductive paper as substitute of ITO glass, which applied on electronic devices especially solar cell. In this current research, the synthesis of AgNW was made by using Polyol process with various molar ratio of PVP AgNO₃ 1, 3, 6, and 8. The various molar ratio was used to investigate its effect on the morphology of the synthesized AgNW, which affect its transparency and conductivity. The effect of different capping agent used would also be investigated by comparing PVP and PVA at the optimal molar ratio obtained. The result in this research showed that 6 is the optimal molar ratio to synthesis the AgNW by using PVP. Ag with wire morphology and conductivity 13 S was obtained at this molar ratio.