

Sintesis ligan para di 2 1 methyl 3 pyridyl 4 5 dihydro 1h pyrazol 5 yl benzena sebagai sensor ion logam pb 2 = Synthesis of para di 2 1 methyl 3 pyridyl 4 5 dihydro 1h pyrazol 5 yl benzene ligand as sensor for pb 2 metal ions / Tirta Angen Pangestu

Tirta Angen Pangestu, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20412719&lokasi=lokal>

---

Abstrak

[Ligan para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzena sudah berhasil disintesis melalui metode kondensasi Aldol. Hasil yang diperoleh dikarakterisasi menggunakan spektrofotometer UV-Vis, spektrofotometer inframerah dan spektrometer NMR. Aplikasi ligan ini adalah sebagai Sensor ion logam Pb<sup>2+</sup> dan dilakukan menggunakan spektrometer UV-Vis. Hasil dari studi sensor menunjukkan bahwa ligan mempunyai intensitas absorbansi yang kuat. Hal ini didukung oleh nilai absorptivitas molar (?) yang besar. Studi spektroskopi UV-Vis pada penambahan ion Pb<sup>2+</sup> menunjukkan munculnya puncak baru pada daerah panjang gelombang 290 nm. Hal ini menunjukkan adanya pembentukan kompleks antara ion logam (Pb<sup>2+</sup>) dengan ligan para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzena. Studi aplikasi sensor menunjukkan bahwa ligan ini dapat dijadikan sensor untuk ion Pb<sup>2+</sup> karena penambahan ion ini menyebabkan penurunan intensitas serapan absorbansi. Hasil studi efektivitas sensor menunjukkan bahwa ligan para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzena merupakan sensor yang efektif terhadap penambahan ion Pb<sup>2+</sup> pada panjang gelombang maksimum (?maks) 291 nm.

.....

The Ligand para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzene has been synthesized well by using Aldol condensation method. The result of synthesizing is characterized by UV-Visible spectrophotometer, Infrared spectrophotometer and NMR spectrometer. The application of this ligand as sensor for Pb<sup>2+</sup> metal ions was studied by using UV-Visible spectrophotometer. Sensing studies indicate that the ligand has a strong absorbance intensity. This is supported by a large molar absorptivity (?) value. UV-Vis spectroscopy studies on the addition of Pb<sup>2+</sup> ions showed the emergence of a new peak at 290 nm wavelength region. This indicates that the complexes formed between metal ions (Pb<sup>2+</sup>) with para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzene ligand. Application sensor studies showed that this ligand can be used as a sensor for Pb<sup>2+</sup> ions due to the addition of these ions causes a quenched absorbance intensity. The results of the study of sensor effectiveness showed that the ligand para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzene is an effective addition of Pb<sup>2+</sup> ions at the maximum wavelength (?max) 291 nm. The ligand para-di-2-(1-methyl-3-pyridyl-4,5-dihydro-1H-pyrazol-5-yl)benzene has been synthesized well by using Aldol condensation method. The result of synthesizing is characterized by UV-Visible spectrophotometer, Infrared spectrophotometer and NMR spectrometer. The application of this ligand as a sensor for Pb<sup>2+</sup> metal ions was studied by using UV-Visible spectrophotometer. Sensing studies indicate that the ligand has a strong absorbance intensity. This is supported by a large molar absorptivity (?) value. UV-Vis spectroscopy studies on the addition of Pb<sup>2+</sup> ions showed the emergence of a new peak at 290 nm wavelength region. This indicates that the complexes formed between metal ions

+Pb<sup>2+</sup> with para-di-(4-methyl-(3-pyridyl)-3-dihydro-1H-pyrazol-3-yl)benzene ligand. Application sensor studies showed that these ligands can be used as sensor for Pb<sup>2+</sup> ions due to the addition of these ions causes a decrease in absorbance intensity. The results of the study of sensor selectivity showed that the ligand para-di-(4-methyl-(3-pyridyl)-3-dihydro-1H-pyrazol-3-yl)benzene is selective for addition of Pb<sup>2+</sup> ions at the maximum wavelength 410 nm.]