

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

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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 Pb²⁺ 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 Pb²⁺ menunjukkan munculnya puncak baru pada daerah panjang gelombang 470 nm. Hal ini menunjukkan adanya pembentukan kompleks antara ion logam Pb²⁺ 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 Pb²⁺ 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 Pb²⁺ pada panjang gelombang maksimum 470 nm.

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19;13;14;15;16;17;18;23;
24;25;26; 28;29;30;, The ligand para-di-*methyl-(pyridyl-*,3-dihydro-!:-pyra<ol-3-yl/ben<ene*
has been synthesized well by using Aldol condensation method. The result of
synthesis is characterized by visible spectrophotometer, infrared
spectrophotometer and UV spectrometer. The application of this ligand as
sensor for Pb²⁺ metal ions was studied by using visible spectrophotometer.
Sensing studies indicate that the ligand has a strong absorbance intensity. This is
supported by a large molar absorptivity value. UV spectroscopy studies on
the addition of Pb²⁺ ions showed the emergence of a new peak at 470 nm
wavelength region. This indicates that the complex formed between metal ions
+Pb²⁺ with para-di-*methyl-(pyridyl-*,3-dihydro-!:-pyra<ol-3-yl/ben<ene*
ligand. Application sensor studies showed that these ligands can be used as sensor
for Pb²⁺ 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-*methyl-(pyridyl-*,3-dihydro-!:-pyra<ol-3-yl/ben<ene*
is selective addition of Pb²⁺ ions at the maximum wavelength 470 nm.]