# Synthesis and characterization of ruthenium(II) complexes incorporating 4-phenyl-terpyridine and triphenylphosphine

**Por:**Moya, SA (Moya, S. A.)[1]; Lopez, R (Lopez, R.)[1]; Perez-Zuniga, C (Perez-Zuniga, C.)[1];Yanez, M (Yanez, M.)[1]; Aguirre, P (Aguirre, P.)[2]

**JOURNAL OF COORDINATION CHEMISTRY**
**Volumen:** 68
**Número:** 14
**Páginas:** 2423-2433
**DOI:** 10.1080/00958972.2015.1047357
**Fecha de publicación:** 2015
**Ver información de revista**

## Resumen

The syntheses of two new series of ruthenium(II) complexes incorporating substituted 4-phenyl-terpyridine, triphenylphosphine, and chloride (A Series) or hydride (B Series) are reported. In both series 4-phenyl-terpyridine incorporated substituents of varying electronic character at the 4-position: 4-(4-chlorophenyl)-2,2:6,2-terpyridine (ClPh-tpy); 4-(4-nitrophenyl)-2,2:6,2-terpyridine (NO2Ph-tpy) and 4-(4-methoxyphenyl)-2,2:6,2-terpyridine (OMePh-tpy). The complexes have been characterized by elemental analysis and UV-vis, IR, and NMR spectroscopy and their electrochemical properties studied. The substituents on the 4-phenyl-terpyridine ligand influence the properties of the metal center. For all complexes prepared, (max) of a characteristic low energy band in the UV-vis spectrum was found to move to shorter wavelengths as the solvent polarity increased (a hypsochromic shift). For the B series complexes, the low energy band was broader and undergoes a small shift to lower frequencies as a result of the substitution of chloride by a hydride. The H-1 and P-31 NMR spectra clearly indicate that the geometry of the 4-phenyl-terpyridine ligand is meridional in the complexes, with the two triphenylphosphines trans to each other. Upon optimization of the experimental procedures the yields increased to 70% for the B series complexes.

## Palabras clave

**Palabras clave de autor:**Ruthenium complexes; Polypyridine complexes; Terpyridine complexes
**KeyWords Plus:**EMITTING ELECTROCHEMICAL-CELLS; TRANSITION-METAL-COMPLEXES;SELECTIVE RECOGNITION; CRYSTAL-STRUCTURE; BRIDGING LIGAND; HIGH-EFFICIENCY; UP-CONVERSION; WATER; ANION; PHOTOPHYSICS

## Información del autor

**Dirección para petición de copias:** Moya, SA (autor para petición de copias)

+ Univ Santiago Chile, Fac Quim & Biol, Dept Quim Mat, Santiago, Chile.

**Direcciones:**

+ [ 1 ] Univ Santiago Chile, Fac Quim & Biol, Dept Quim Mat, Santiago, Chile

[ 2 ] Univ Chile, Fac Ciencias Quim & Farmaceut, Santiago, Chile

**Direcciones de correo electrónico:**sergio.moya@usach.cl; paguirre@ciq.uchile.cl

## Financiación


| Entidad financiadora | Número de concesión |
|---|---|
| FONDECYT-CHILE | 1120149<br>1120685 |
| LIA-MIF 836 (FRANCE) - CONICYT(CHILE) | |

Ver texto de financiación


## Editorial

TAYLOR & FRANCIS LTD, 4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON, ENGLAND

## Categorías / Clasificación

**Áreas de investigación:**Chemistry

**Categorías de Web of Science:**Chemistry, Inorganic & Nuclear

## Información del documento

**Tipo de documento:**Article

**Idioma:**English

**Número de acceso:** WOS:000357867600004

**ISSN:** 0095-8972

**eISSN:** 1029-0389

## Información de la revista

- **Impact Factor:** Journal Citation Reports®

## Otra información

**Número IDS:** CM7JJ