

# REVUE ROUMAINE DE CHIMIE (ROMANIAN JOURNAL OF CHEMISTRY)

Tome 68, N<sup>os</sup> 5–6

Mai-Juin 2023

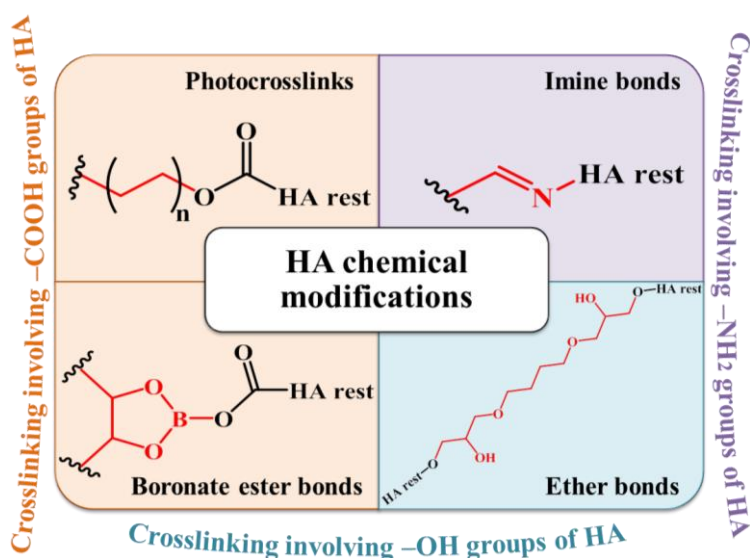
Professor Bogdan C. Simionescu at his 75<sup>th</sup> anniversary

Rev. Roum. Chim., 2023, 68(5–6), 197–200

## REVIEW

Sabina Ioana TRIFAN and Daniela IVANOV

Strategies of hyaluronan chemical modifications for biomedical applications



**Key words:** hyaluronan, hyaluronic acid, chemical modifications, biomaterials, biomedical applications.

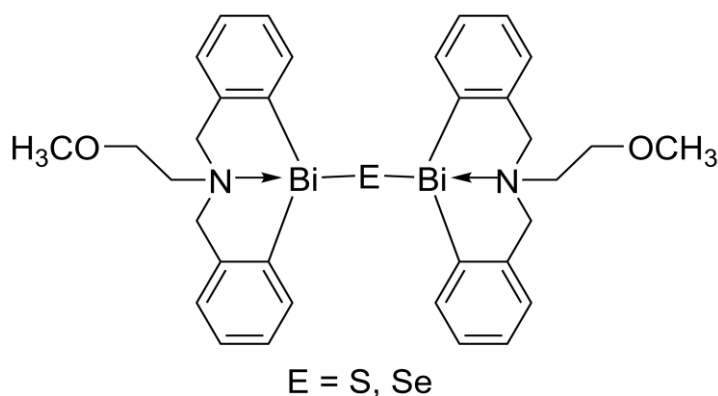
DOI: 10.33224/rrech.2023.68.5-6.01

Rev. Roum. Chim., 2023, 68(5–6), 201–207

## PAPERS

Lavinia CORJUC, Cristian SILVESTRU and Anca SILVESTRU

New organobismuth(III) compounds based on a tetrahydro-dibenzo[*c,f*][1,5] azabismocine heterocyclic framework



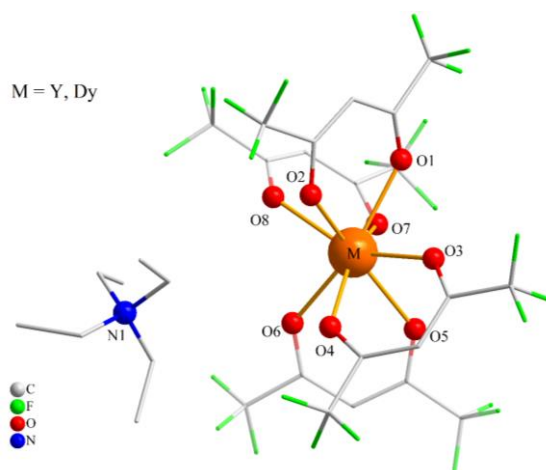
**Key words:** organobismuth chalcogenides, hypercoordination, solution behavior, single-crystal X-ray diffraction.

DOI: 10.33224/rrech.2023.68.5-6.02

Rev. Roum. Chim., 2023, 68(5–6), 209–215

**Mihai RĂDUCĂ, Marius Mihai ZAHARIA  
and Marius ANDRUH**

Synthesis and crystal structures of yttrium and dysprosium tetrakis(hexafluoroacetylacetonato) complex anions with tetramethylammonium counterions

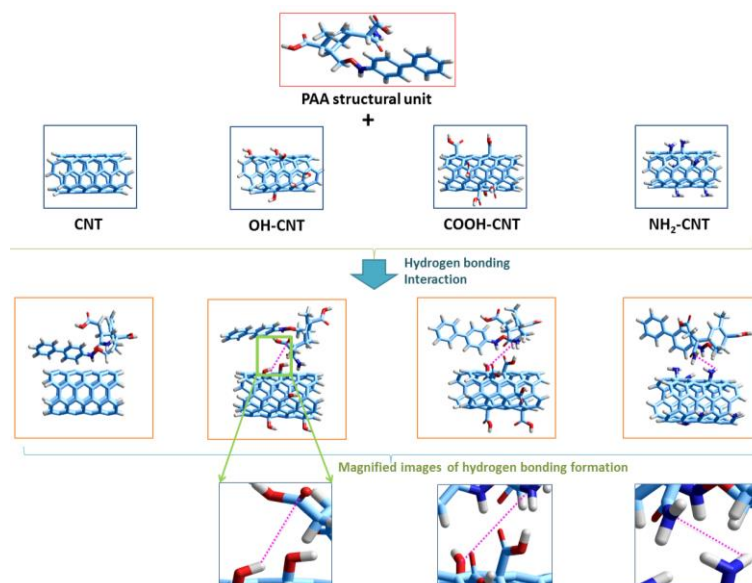


DOI: 10.33224/rch.2023.68.5-6.03  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 217–220

**Key words:** hexafluoroacetylacetonate, X-ray structure, yttrium complexes, dysprosium complexes.

**Andreea Irina BARZIC, Iuliana STOICA,  
Marius SOROCEANU, Simona Luminita  
NICA and Raluca Marinica ALBU**

Polyimide precursor/functionalized carbon nanotubes: molecular modeling and physical properties theoretical evaluation

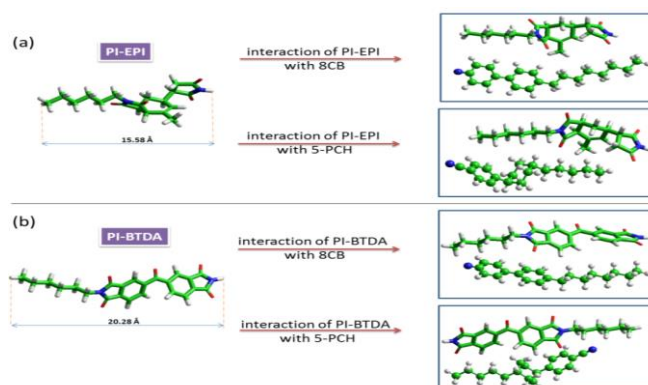


DOI: 10.33224/rch.2023.68.5-6.04  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 221–226

**Key words:** polymer, carbon nanotubes, conductivity.

**Raluca Marinica ALBU, Luminita Ioana  
BURUIANA, Iuliana STOICA, Camelia  
HULUBEI and Andreea Irina BARZIC**

Dianhydride moieties involvement on the interactions of some polyimides with nematic compounds

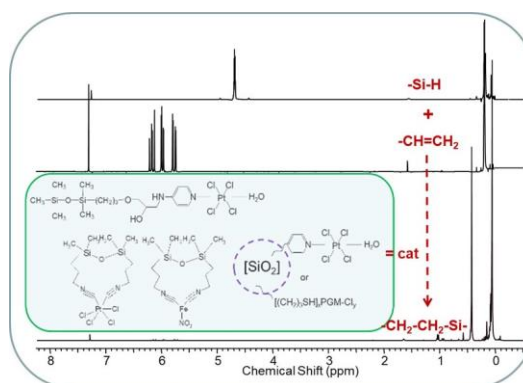


DOI: 10.33224/rch.2023.68.5-6.05  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 227–232

**Key words:** polyimide, liquid crystal, optical properties, adhesion.

### Carmen RACLES

Molecular and silica-supported metal complexes as new catalysts for hydrosilylation

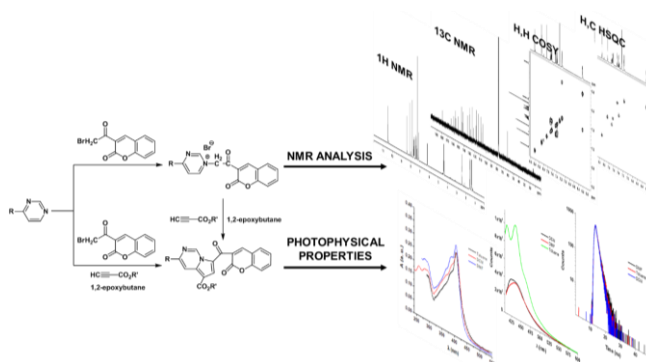


DOI: 10.33224/rrch.2023.68.5-6.06  
Rev. Roum. Chim., 2023, 68(5–6), 233–240

**Key words:** catalysis; hydrosilylation; metal complexes; silica-supported catalyst; disiloxane ligands.

Alina NICOLESCU, Anton AIRINEI, Emilian GEORGESCU, Florentina GEORGESCU, Radu TIGOIANU, Florea DUMITRASCU, Marcel Mirel POPA, Adriana T. MARINOIU and Calin DELEANU

Synthesis and spectroscopic properties of novel indolizines and azaindolizines

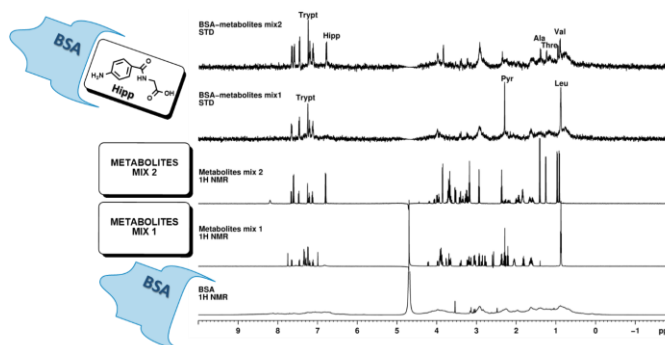


DOI: 10.33224/rrch.2023.68.5-6.07  
Rev. Roum. Chim., 2023, 68(5–6), 241–252

**Key words:** indolizines, azaindolizines, pyrrolo[1,2-*c*]pyrimidines, NMR, fluorescence.

Cătălin DUDUIANU, Alina NICOLESCU, Mihaela CRISTEA, Raluca STAN and Calin DELEANU

NMR proven albumin interaction with metabolites in complex mixtures

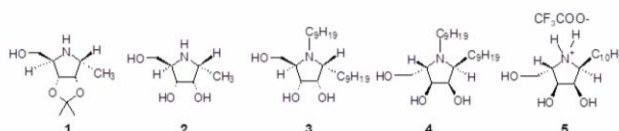


DOI: 10.33224/rrch.2023.68.5-6.08  
Rev. Roum. Chim., 2023, 68(5–6), 253–259

**Key words:** proteins, metabolites, NMR, fragment screening.

Carmen-Irena MITAN, Emerich BARTHA and Petru FILIP

Relationship between tetrahedral and dihedral on hypersphere coordinates



$$9a: \varphi_{C1} = \cos^{-1} \sin[-(\tan^{-1} 1/R_m)/2]$$

$$9b: \varphi_{C2} \text{ or } \varphi_{C3} = \cos^{-1} \sin\{-[60 - (\tan^{-1} 1/R_m)]/2\}$$

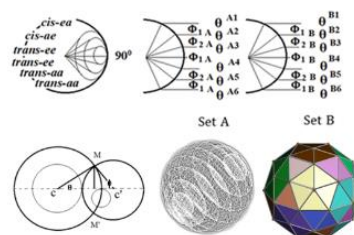
$$9c: \varphi_{C4} = \cos^{-1} \sin[-(\sin^{-1} 1/R_m)/2]$$

DOI: 10.33224/rrch.2023.68.5-6.09  
Rev. Roum. Chim., 2023, 68(5–6), 261–268

**Key words:** hypersphere coordinated, tetrahedral angle, Hopf fibration, dihedral angle, vicinal angles.

**Carmen-Irena MITAN, Emerich BARTHA  
and Petru FILIP**

Tetrahedral angles of six membered ring  
calculated from NMR data with 3-sphere  
approach



$$\text{Eq. 2a: } 4D: \sin^{-1} \tan \{-\sin^{-1} [n \times (1/R_m)]\} = -C, \quad 2c: 3D: \cos^{-1} \sin(-C/n) = \varphi_{Ca}^{\sin}$$

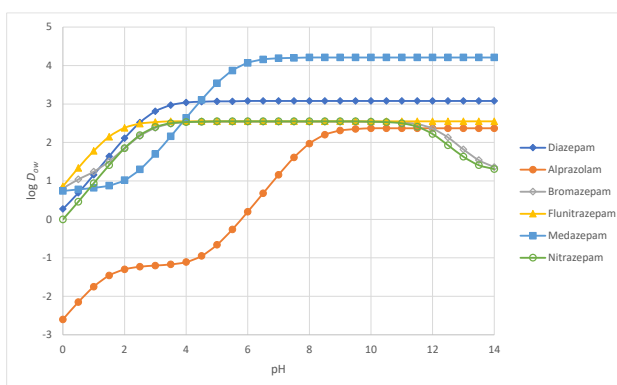
$$\text{Eq. 2b: } 4D: \tan^{-1} \sin \{-\tan^{-1} [n \times (1/R_m)]\} = -D, \quad 2d: 3D: \cos^{-1} \sin(-D/n) = \varphi_{Ca}^{\tan}$$

DOI: 10.33224/rrch.2023.63.5-6.10  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 269–276

**Key words:** 3-sphere, tetrahedral angles, dihedral angles, hypersphere  
coordinated.

**Elena BACALUM, Toma GALAON, Andrea-  
Cristina SOARE, Victor DAVID and Serban  
C. MOLDOVEANU**

Comparative study for the retention of some  
benzodiazepines in reversed-phase liquid  
chromatography using C8, C18, C6H5 and CN  
stationary phases

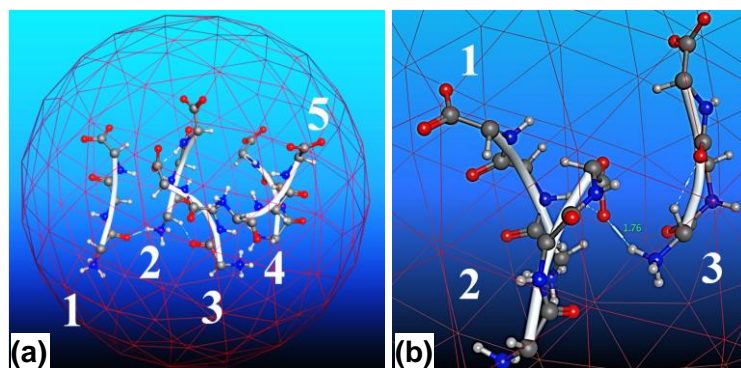


DOI: 10.33224/rrch.2023.68.5-6.11  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 277–283

**Key words:** benzodiazepines, reversed-phase HPLC, retention dependences,  
hydrophobicity, mobile phase.

**Ştefania-Claudia JITARU and Gabi  
DROCHIOIU**

Mass spectrometric characterization of some gel-  
forming peptides



DOI: 10.33224/rrch.2023.68.5-6.12  
*Rev. Roum. Chim.*, **2023**, 68(5–6), 285–295

**Key words:** peptide synthesis, mass spectrometry, aggregation, molecular  
modelling, infrared spectroscopy.