

# Inorganic Chemistry, Radiochemistry and Radiopharmacy

## Inorganic and Organometallic Chemistry

### Journals

- J. K. Gibson, R. G. Haire, J. Marçalo, M. Santos, J. P. Leal, A. Pires de Matos, R. Tyagi, M. K. Mroziak, R.M. Pitzer, B.E. Bursten, FTICR/MS Studies of Gas-Phase Actinide Ion Reactions: Fundamental Chemical and Physical Properties of Atomic and Molecular Actinide Ions and Neutrals, *Eur. Phys. J. D* 45 (2007) 133-138.
- J.K. Gibson, R.G. Haire, J. Marçalo, M. Santos, A. Pires de Matos, M.K. Mroziak, R.M. Pitzer, B.E. Bursten, Gas-Phase Reactions of Hydrocarbons with  $An^+$  and  $AnO^+$  ( $An = Th, Pa, U, Np, Pu, Am, Cm$ ): The Active Role of 5f Electrons in Organoprotactinium Chemistry, *Organometallics* 26 (2007) 3947-3956.
- A. Domingos, I. Lopes, J.C. Waerenborgh, N. Marques, G.Y. Lin, X.W. Zhang, J. Takats, R. McDonald, A.C. Hillier, A. Sella, M.R.J. Elsegood, V.W. Day, Trapping of Anionic Organic Radical by  $(TpMe_2)_2Sm$ : Solid State Structure and Solution Behavior of a Sm(III)-Benzophenone Ketyl Complex, *Inorg. Chem.* 46 (2007) 9415-9424.
- J.B. Branco, D. Ballivet-Tkatchenko, A. Pires de Matos, Gas-Phase Hydrogenation of Propionitrile Catalyzed by  $LnCu_2$  ( $Ln = La, Ce, Pr, Nd$ ), *J. Phys. Chem. C* 111 (2007) 15084-15088.
- J.P. Leal, J.M.S.S. Esperança, M.E. Minas da Piedade, J.N. Canongia Lopes, L.P.N. Rebelo, K.R. Seddon, The Nature of Ionic Liquids in the Gas Phase, *J. Phys. Chem. A* 111 (2007) 6176-6182.
- L.S. Richard, C.E.S. Bernardes, H.P. Diogo, J.P. Leal, M.E. Minas da Piedade, Energetics of Cresols and of Methylphenoxyl Radicals, *J. Phys. Chem. A* 111 (2007) 8741-8748.
- C. Hipólito, J.P. Leal, Y. Guo, M. Epple, Corrigendum to "Thermochemistry of alkaline-earth phenoxides" [*J. Chem. Thermodyn.* 38 (2006) 296-303], *J. Chem. Thermodyn.* 39 (2007) 167-168.
- A.K. Hijazi, H.Y. Yeong, Y. Zhang, E. Herdtweck, O. Nuyken, F.E. Kühn, Isobutene Polymerization Using  $[Cu-II(NCMe)(6)](2+)$  with Non-Coordinating Anions as Catalysts, *Macromol. Rapid Commun.* 28 (2007) 670-675.
- A.M.J. Rost, W.A. Herrmann, F.E. Kühn, Methylrhenium Oxides, *Tetrahedron Lett.* 48 (2007) 1775-1779.
- S. Syukri, W. Sun, F.E. Kühn, Immobilization of Ruthenium(II) Salen Complexes on Poly(4-vinylpyridine) and their Application in Catalytic Aldehyde Olefination, *Tetrahedron Lett.* 48 (2007) 1613-1617.
- S. Syukri, A.K. Hijazi, A. Sakthivel, A.I. Al-Hmaideen, F.E. Kühn, Heterogenization of Solvent-Ligated Copper(II) Complexes on Poly(4-vinylpyridine) for the Catalytic Cyclopropanation of Olefins, *Inorg. Chim. Acta* 360 (2007) 197-202.
- F.M. Pedro, A.M. Santos, W. Baratta, F.E. Kühn, Organometallic Ruthenium Complexes: Application in the Olefination of Carbonyl Compounds, *Organometallics* 26 (2007) 302-309.
- A. Sakthivel, F.M. Pedro, A.S.T. Chiang, F.E. Kühn, Grafting of Cyclopentadienyl Ruthenium Complexes on Aminosilane Linker Modified Mesoporous SBA-15 Silicates, *Dalton Trans.* (2007) 320-326.
- M.-D. Zhou, J. Zhao, J. Li, S. Yue, C.-N. Bao, J. Mink, S.-L. Zang, F.E. Kühn, MTO Schiff-Base Complexes: Synthesis, Structures and Catalytic Applications in Olefin Epoxidation, *Chem. Eur. J.* 13 (2007) 158-166.
- M.H. Casimiro, M.H. Gil, J.P. Leal, Drug Release Assays from New Chitosan/Phema Membranes Obtained by Gamma Irradiation, *Nucl. Instrum. Methods Phys. Res., Sect. B* 265 (2007) 406-409.
- M.J. Melo, M. Sousa, A.J. Parola, J.S. Seixas de Melo, F. Catarino, J. Marçalo, F. Pina, Identification of 7,4'-Dihydroxy-5-Methoxyflavylium in «Dragon's Blood». To Be or not to Be an Anthocyanin, *Chem. Eur. J.* 13 (2007) 1417-1422.

### Other Publications

- C. Pedruco, J. P. Leal, A Utilização de Software Educativo pelos Professores de Química e de Física, *Quimica* 104 (2007) 17-24.
- J. P. Leal, Nobel da Química 2007, *Mundus* 24 (2007) 22-23.

### Internal Reports

- T. Pardal, R. Fernandes, M. Gonçalves, J. Condeço, A. Boavida, J. Branco, Energon - Space Long Term R&D, ESA/ESTEC - OMNIDEA, Contract No. 19594 /06/NL /PA, Technical Notes 6&7 – Sep. 2007, 1-64
- M.L. Botelho, R. Melo, J. Branco, Detecção e Classificação do Odor da Rolha, Internal Report for RCP InterNac. S.A., March 2007, pp. 1-5.

### Patents

- A. Pires de Matos, J. P. Leal, J. Branco, N. Pinhão, Sistema de Tratamento de Resíduos Plásticos em

Leito de Metal Fundido, Portuguese Patent, PT 103302 (definitive attribution).

### Communications

J. Marçalo, FTICR/MS Studies of the Gas-Phase Chemistry of Actinide Ions, *1<sup>st</sup> Meeting of the Portuguese National Mass Spectrometry Network*, Aveiro, Portugal, Nov. 2007, oral.

J. Marçalo, M. Santos, J. P. Leal, A. Pires de Matos, J. K. Gibson, R. G. Haire, FTICR/MS studies of the gas-phase chemistry of actinide ions: insights into actinide oxide energetics, the role of 5f electrons in organoactinides and actinide-transition metal bonding, *1<sup>st</sup> Meeting of Portuguese Nat. Mass Spectrometry Network*, Aveiro, Portugal, Nov. 2007, poster.

J. Cui, J.M. Carretas, I.C. Santos, N. Marques, Bis(phenolate)diamine Alkyls of Y and Sm: Synthesis and Reactivity, *Inorganic Chemistry Conf.*, Western Cape, South Africa, July 2007, poster.

S.R. Gomes, F.M.A. Margaça, L.M. Ferreira, I.M. Miranda Salgado, J.P. Leal, A. N.Falcão, PDMS-TEOS-PrZr Hybrid Materials Prepared by  $\gamma$ -Irradiation, *13<sup>a</sup> Conf. da Sociedade Portuguesa de Materiais*, Porto, Portugal, Apr. 2007, poster

F.M. Lopes, A.M. Lima, M.C. Freitas, H.M. Dzung, A. Pires de Matos, Determination of Sodium, Potassium and Manganese by Neutron Activation Analysis of Museum Glass Objects, *II Jornadas Nac. sobre El Vidrio en la España Romana, Fundación Centro Nac. del Vidrio*, Granja de San Ildefonso - Segóvia, Spain, Nov. 2007, poster.

A.M. Lima, F.M. Lopes, C. Carvalho, A. Pires de Matos, Analysis of glasses - evaluation of non-sampling micro-EDXRF, *Non-destructive and Microanalytical Techniques in Art and Cultural Heritage Research*, Lisboa, April 2007, poster.

A.M. Lima, F.M. Lopes, T. Medici, M. Vilarigues, J. Coroado, C. Carvalho, A. Pires de Matos, Caracterização de Vidros Arqueológicos dos Séculos XVI e XVIII, *Conservação e Restauro em Portugal na Encruzilhada de Bolonha*, Monte de Caparica, Portugal, March 2007, oral.

A. Ruivo, V.S.F. Muralha, A. Lima, A.J. Parola, A. Pires de Matos, Luminescent Glasses Doped with Europium and d-Transition Elements for Conservation and Restoration of Ceramic Art Works, *XXI Int. Cong. of Glass*, Strasbourg, France, July 2007, poster

### Theses

#### PhD

M.A.Q. Antunes, Síntese e Reactividade de Compostos de Urânio(III) com Ligandos Quelantes Doadores de Azoto, FC-UL 2007. Supervisors: N. Marques and J. P. Leal.

#### MSc

B.J.C. Vieira, Estudos em Química de Coordenação de Urânio(III), Instituto Superior Técnico, 2007. Supervisor: N. Marques.

C.M.B. Mendes, Avaliação das Aprendizagens dos Alunos com Base no Microsoft Excel, FC-UL 2007. Supervisors: J. P. Leal and E. Elias.

M.S.B. Pinheiro, A Química de Lupa na Mão, FC-UL 2007. Supervisor: J.P. Leal.

I.M.M. Cipriano, Os Cientistas na Toponímia, FC-UL 2007. Supervisor: J.P. Leal.

P.A.B. Caramelo, Manual Multimédia para Física e Química, FC-UL 2007. Supervisor: J. P. Leal.

#### Graduation

R.A.G. Simões, Síntese e Caracterização de Apatites, FC-UL 2007. Supervisors: J. P. Leal and M. E. Minas da Piedade.

## Inorganic and Radiopharmaceutical Chemistry

### Books and Book Chapters

J.-U. Kunstler, I. Santos, I. Pirmettis, H.-J. Pietzsch, Technetium-99m Labelling of a Quinazoline Derivative Using the 4+1 Mixed Ligand Chelate System, *In Labelling of Small Biomolecules Using Novel Technetium-99m Cores, Technical Reports Series*, ISSN 0074-1914, n° 459, Chapter 8, 121-127, Printed by IAEA, Vienna, Austria, 2007.

I. Santos, C. Fernandes, S. Alves, J. D.G. Correia, L. Gano, I. Pirmettis, C. Decristoforo, C.J. Smith, R. Alberto, Labelling of Quinazoline and RGD Peptides with the  $[^{99m}\text{Tc}(\text{OH}_2)_3(\text{CO})_3]^+$  Core: Synthesis, Characterization and Biological Evaluation, *In Labelling of Small Biomolecules Using Novel Technetium-99m Cores, Technical Reports Series*, ISSN 0074-1914, n°459, Chapter 16, 219-231, Printed by IAEA, Vienna, Austria, 2007.

R. Alberto, Y. Liu, N. Agorastos, I. Santos, P. Raposinho, H. Knight, J. Mertens, M. Bauwens, Small Molecule Labelling with  $[^{99m}\text{Tc}(\text{OH}_2)_3(\text{CO})_3]^+$ : Ligands, Amino Acids and Intercalators, *In Labelling of Small Biomolecules Using Novel Technetium-99m Cores, Technical Reports Series*, ISSN 0074-1914, n° 459, chapter 18, 249-260, IAEA, Austria, 2007

S. Alves, J.D.G. Correia, I. Santos, C. Decristoforo, R. Alberto, C.J. Smith, *In Vitro* and *in Vivo* Evaluation of  $[^{99m}\text{Tc}(\text{CO})_3\text{-CYCLO}[\text{Arg-Gly-Asp-D-Tyr-Lys(pz)}]]$ , *In Labelling of Small Biomolecules Using Novel Technetium-99m Cores, Technical Reports Series*, ISSN 0074-1914, n° 459, Chapter 20, 287-304, Printed by IAEA, Vienna, Austria, 2007.

**Journals**

L. Maria, S. Cunha, M. Videira, L. Gano, A. Paulo, I. C. Santos, I. Santos, Rhenium and Technetium Tricarbonyl Complexes Anchored by Pyrazole-based Tripods: Novel Lead Structures for the Design of Myocardial Imaging Agents, *Dalton Trans.* (2007) 3010-3019.

S. Alves, J.D.G. Correia, L. Gano, T.L. Rold, A. Prasanphanich, R. Haubner, M. Rupprich, R. Alberto, C. Decristoforo, I. Santos, C.J. Smith, In Vitro and In Vivo Evaluation of a Novel  $^{99m}\text{Tc}(\text{CO})_3$ -Pyrazolyl Conjugate of cyclo-(Arg-Gly-Asp-D-Tyr-Lys), *Bioconjugate Chem.* 18 (2007) 530-537.

C. Xavier, Jae-Kyoung Pak, R. Alberto, I. Santos, Evaluation of two Chelators for Labelling a PNA Monomer with the  $\text{fac-}[^{99m}\text{Tc}(\text{CO})_3]^+$  Moiety, *J. Organomet. Chem.* 692 (2007) 1332-1339.

E. Palma, B.L. Oliveira, J.D.G. Correia, L. Gano, L. Maria, I.C. Santos, I. Santos, A new Bisphosphonate-containing  $^{99m}\text{Tc}(\text{I})$  tricarbonyl complex potentially useful as bone-seeking agent: synthesis and biological evaluation, *J. Biol. Inorg. Chem.* 12 (2007) 667-679.

E. Palma, B.L. Oliveira, F. Figueira, J.D.G. Correia, P.D. Raposo, I. Santos, A pyrazolylamine-phosphonate monoester chelator for the  $\text{fac-}[\text{M}(\text{CO})_3]^+$  core (M = Re,  $^{99m}\text{Tc}$ ): synthesis, coordination properties and biological assessment, *J. Labelled Cpd. Radiopharm.* 50 (2007) 1176-1184.

E. A. F. de Almeida, I. Alho, F. Marques, C. Thiran, M. P. Bicho, M. Prata, Haemoglobin and erythropoietin levels in polycystic kidney disease, *Nephrol Dial Transplant* (2007) 1-2.

C. Fernandes, C. Oliveira, L. Gano, A. Bourkoula, I. Pirmettis, I. Santos, Radioiodination of New EGFR Inhibitors as Potential SPECT Agents for Molecular Imaging of Breast Cancer, *Bioorg. Med. Chem.* 15 (2007) 3974-3980.

L. Gano, F. Marques, M. P. Campello, M. Balbina, S. Lacerda, I. Santos, Radiolanthanide complexes with tetraazamacrocycles bearing methylphosphonate pendant arms as bone seeking agents, *Q. J. Nucl. Med. Mol. Imaging* 51 (2007) 6-15.

M.P. Campello, F. Marques, L. Gano, S. Lacerda, I. Santos, Radiochemical and biological evaluation of  $^{153}\text{Sm}$  and  $^{166}\text{Ho}$  complexes anchored by a novel bis(methylphosphonate) tetraazamacrocycles, *Radiochim. Acta* 95 (2007) 329-334.

C. Decristoforo, A. Rey, J.U. Kuenstler, H.J. Pietzsch, J.D.G. Correia, I. Santos, C.J. Smith, L.B. Faintuch, I. Hernandez-Gonzales, M. Rupprich, R. Alberto, R. Haubner, Comparison of in vitro and in vivo properties of  $^{99m}\text{Tc}$ -RGD peptides for targeting tumour angiogenesis labelled using different novel Tc-cores, *Q. J. Nucl. Med. Mol. Imaging* 51 (2007) 33-41.

F. Marques, L. Gano, M.P. Campello, S. Lacerda, I. Santos, Biological evaluation of  $^{153}\text{Sm}$  and  $^{166}\text{Ho}$  complexes with tetraazamacrocycles containing

methylcarboxylate and/or methylphosphonate pendant arms, *Radiochim. Acta* 95 (2007) 335-341.

S. Lacerda, M.P. Campello, I.C. Santos, I. Santos, R. Delgado, Study of the cyclen derivative 2-[1,4,7,10-tetraazacyclododecan-1-yl]-ethanethiol and its complexation behaviour towards d-transition metal ions, *Polyhedron* 26 (2007) 3763-3773.

**Patents**

I. Santos, A. Paulo, Tripodal ligands with the coordination motifs  $\text{k}^2\text{-BH}_2$  or  $\text{k}^3\text{-BH}_3$  relevant for biomedical applications of organometallic complexes, WO 2007073472 A2.

I. Santos, A. Paulo, Tricarbonyl Complexes with Tridentate Chelators for Myocardium Imaging, PCT/EP2007/010216.

**Conference Proceedings**

T. Yasuda, T. Thiemann, M. C. Oliveira, C. Neto, L. Gano, G. Morais, C. Santos, F. Botelho, C. Oliveira, Substituted-1,3,5(10)-tetraen-3,17 $\beta$ -diols as potential radioligands for the estrogen receptor-synthesis and biochemical behaviour, *9<sup>th</sup> Cross Straits Symp. on Materials, Energy and Environmental Engineering*, Pohang, South Korea, pp. 117-119, Nov. 2007.

K. Shiine, C. Burmester, M. Watanabe, T. Thiemann, M. C. Oliveira, C. Neto, L. Gano, A. C. Santos, F. Botelho, C. Oliveira Ring-annulated Estranes, *9<sup>th</sup> Cross Straits Symp. on Materials, Energy and Environmental Engineering*, Pohang, South Korea, pp. 117-119, Nov. 2007.

T. Yasuda, Y. Shima, M. C. Oliveira, G. R. Morais, K. Ideta, T. Thiemann,  $7\alpha$ -Alkoxyestra-1,3,5(10)-trienes. *11<sup>th</sup> Int. Electr. Conf. on Synthetic Organic Chemistry*, 1-30 Nov.2007, General Organic Synthesis, a032. ([www.usc.es/congresos/ecsoc/11/ECSOC11.htm](http://www.usc.es/congresos/ecsoc/11/ECSOC11.htm))

**Communications**

I. Santos, Radioterapia Selectiva: Emissores  $\beta^-$  ou de Electrões Auger, Actualizações em Oncologia, 2007, 22<sup>a</sup> Reunião, Hospitais da Universidade de Coimbra, 18-19 Jan. 2007, invited talk.

C. Neto, M. Oliveira, L. Gano, F. Marujo, I. Santos, G. Morais, C. Santos, F. Botelho, C. Oliveira, T. Yasuda, T. Thiemann, Novel estra-1,3,5(10),6(7)-tetraen-3,17(beta)diols as potential radioligands for the estrogen receptor, *10<sup>th</sup> Eurasia Conf. of Chemical Sciences*, Manila, 7-11, Jan. 2007, poster.

R. Garcia, Synthesis, Characterization and Labelling with Gallium of a bifunctional chelator bearing a quinazoline moiety, *Cost D38 Meeting*, Eindhoven, Netherlands, 3-5 May, 2007, oral.

A. Paulo, F. Silva, R. Garcia, F. Marques, I. Santos, Synthesis, characterization and cytotoxic activity of Ga(III) complexes with asymmetric Pyrazolyl-containing ligands, *13<sup>th</sup> Int. Conf. on Biological Inorganic Chemistry*, Vienna, Austria, Jul.2007 poster

PUBLICATIONS

- J.D.G. Correia, New Re/Tc Organometallic Complexes with Pyrazolyl-Based Chelators for Nuclear Targeting, *COST D39 - Joint meeting between WG1 and WG3*, Villars-sur-Ollon, Switzerland, 29-30 Sep., 2007, oral.
- S. Lacerda, M.P. Campello, F. Marques, L. Gano, I. Santos, Radiolanthanide complexes with a novel dota-like chelator, *2<sup>nd</sup> European Conf.on Chemistry for Life Sciences*, Wroclaw, Poland, 4-8 Sep. 2007, poster.
- C. Xavier, S. Falcão, P.D. Raposinho, J.D.G. Correia, P. Gomes, I. Santos, A Cyclic  $\alpha$ -MSH Analog Labeled with [<sup>99m</sup>Tc(CO)<sub>3</sub>]<sup>+</sup> for Receptor-Mediated Targeting of Melanoma, *2<sup>nd</sup> Eur. Conf. on Chemistry for Life Sciences*, Wroclaw, Poland, 4-8 Sep. 2007, oral.
- R. Garcia, P. Campello, A. Paulo, I. Santos, DOTA-like Compounds Bearing Quinazoline Moieties for Targeting of EGFR-tyrosine kinase *2<sup>nd</sup> Eur. Conf. on Chemistry for Life Sciences*, Wroclaw, Poland, 4-8 Sep. 2007, oral.
- P.D. Raposinho, J.D.G. Correia, S. Alves, A.C. Santos, M.F. Botelho, I. Santos, A Pyrazolyl- $\alpha$ -MSH Analog Conjugate Labeled with <sup>99m</sup>Tc(CO)<sub>3</sub> for Melanoma Targeting, *Joint Molecular Imaging Conf.*, Providence, USA, Sep. 2007, poster.
- A. Paulo, R.F. Vitor, T. Esteves, C. Xavier, F. Marques, I. Correia, J.C. Pessoa, G.G. Martins, G. Viola, I. Santos, Multifunctional Organometallic Complexes for Fluorescence and Nuclear Imaging, *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, oral.
- J.D.G. Correia, Complexos Organometálicos de Re e <sup>99m</sup>Tc com Afinidade para o Óxido Nítrico Sintase e sua Relevância Biológica, *Ciclo de Seminários Professora Marieta da Silva, DQB-FCUL*, Lisbon, Portugal, 19 Dez., 2007, invited talk.
- B.L. Oliveira, J.D.G. Correia, P.D. Raposinho, I. Santos, C. Cordeiro, A.P. Freire, Re and <sup>99m</sup>Tc Organometallic Complexes Containing L-Arginine Analogues as Substrates/Inhibitors of Nitric Oxide Synthase, *VII Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- E. Palma, B.L. Oliveira, J.D.G. Correia, L. Gano, I. Santos, Bisphosphonate-containing <sup>99m</sup>Tc(I) tricarbonyl complexes potentially useful as bone-seeking agents: synthesis and biological evaluation, *VII Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- T. Esteves, C. Xavier, F. Marques, A. Paulo, G.G. Martins, I. Santos, Rhenium(I) Tricarbonyl Complexes Bearing Acridine Moieties: Synthesis, Characterization and Fluorescence Imaging Studies, *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- C. Moura, C. Fernandes, L. Gano, A. Paulo, I.C. Santos, I. Santos, P.D. Vaz, M.J. Calhorda, Synthesis, Characterization, Biological Evaluation and DFT Studies of Re(I)/ <sup>99m</sup>Tc(I) Tricarbonyl Complexes Anchored by Pyrazolyl-based Chelators, *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- F. Silva, M. Videira, R. Garcia, F. Marques, A. Paulo, I.C. Santos, I. Santos, Synthesis, Structural characterization and biological studies of homoleptic Gallium(III) complexes with novel tridentate (N,N',O) chelators, *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- M. Videira, F. Silva, A. Paulo, I. Santos, Novel mixed-ligand oxorhenium (v) complexes combining tridentate (N,N,O) and bidentate (O,O) chelators, *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Portugal, Nov. 30-Dez. 1, 2007, poster.
- C. Neto, C. Fernandes, C. Oliveira, L. Gano, A. Bourkoula, I. Pirmettis, I. Santos, Radiolabelled 6-substituted-4-haloquinazolines as potential SPECT probes for EGFR positive tumors. *7<sup>a</sup> Conf. de Química Inorgânica*, Fátima, Nov. 30-Dez. 1, 2007, poster.
- C. Neto, M.C. Oliveira, L. Gano, F. Marques, I. Santos, G. Morais, T. Yasuda, T. Thiemann, C. Santos, F. Botelho, C. Oliveira, Substituted estra-1,3,5(10),6-tetraen-3,17b-diols as potential ligands for the estrogen receptor synthesis and biochemical studies, *Western Japan Chemistry Conf.*, Okayama, Japão, 10-11 Nov., 2007, poster.
- S. Chaves, S. Marques, D. Socoto, M. Carrasco, F. Vilhena, L. Gano, M.A. Santos, New chelating agents for metal decorporation. Improved sequestering capability and bioavailability, *13<sup>th</sup> Int. Conf. on Biological Inorganic Chemistry*, Vienna, Austria, 15-20 July 2007, poster.
- M. Forsterova, F. Marques, L. Gano, Z. Jandurova, P. Hermann, F. Melichar, I. Santos, Chemical and biological evaluation of <sup>153</sup>Sm and <sup>166</sup>Ho complexes with tetraethylester of DOTP (DOTPOEt), *17<sup>th</sup> Symp. on Radiopharmaceutical Sciences*, Aachen/Julich, Germany, 30 April-4 May 2007. Poster
- C. Fernandes, C. Oliveira, L. Gano, C. Neto, A. Bourkoula, I. Pirmettis, I. Santos, Novel Biomarkers for Molecular Imaging of EGFR Positive Tumors. *7<sup>o</sup> Congresso de Medicina Nuclear*, Porto, 8-10 Nov. 2007, oral.
- P.D. Raposinho, C. Xavier, J.D.G. Correia, S. Falcão, P. Gomes, I. Santos, A novel <sup>99m</sup>Tc(CO)<sub>3</sub>-labeled lactam-based cyclized  $\alpha$ -MSH analog for melanoma targeting, *XI Congresso Nac. de Medicina Nuclear*, Porto, 8-10 Nov. 2007, invited oral.
- I. Santos, <sup>99m</sup>Tc Tricarbonyl Complexes Anchored by Pyrazole-Based Tripods: Design of Myocardial Imaging Agents, *XI Congresso Nac. de Medicina Nuclear*, Porto, 8-10 Nov. 2007, invited oral.
- I. Santos, <sup>99m</sup>Tc Radiopharmaceuticals Sentinel Node Detection and Cancer Diagnosis, IAEA, Vienna, Nov. 2007, invited oral.
- I. Santos, *Tópicos seleccionados em Imagiologia Molecular e Terapia Selectiva*, Aplicações médicas das radiações ionizantes em Portugal - investigação

científica e prestação de serviços, ITN, Sacavém, 29 Nov. de 2007, invited oral.

### Internal reports

L. Gano, I. Santos, Radiation Protection Program for ITN Radiopharmaceutical Laboratories, report submitted to *Direcção Geral da Saúde* to renew the laboratory license, 2007.

C. Xavier, Labelling of Oligodeoxynucleotides (DNA) and Peptide Nucleic Acids (PNA) with the  $[M(CO)_3]^+$  (M=Re, Tc) Moieties, FCL, March 2007.

S. Lacerda, Tetraazamacrociclos e complexos de metais de transição-d e f- com potencial aplicação em Medicina Nuclear, FCL, March 2007

B. Martins and A. Santos, Optimização da Síntese do Complexo  $fac-[^{99m}Tc(CO)_3\{\kappa^3-H(\mu-H)_2B(tim^{Me})\}(CO)_3]$ , ESteSL (2007). Supervisor: António Paulo

### Theses

#### PhD

R.F. Vitor, Complexos de Rénio e Tecnécio com Ligandos N-heterocíclicos Dirigidos ao Núcleo de Células Tumorais: Da Imagiologia Molecular à Radioterapia com  $^{99m}Tc$ , PhD Thesis, FC-UL 2007. Supervisor: António Paulo.

#### MSc

E. Palma, Complexos de Re e Tc Contendo Antagonistas dos Receptores Serotonérgicos 5HT<sub>1A</sub> Estabilizados por Fosfinas Heterofuncionalizadas: Química, Radioquímica e Avaliação Biológica, FC-UL, 2007. Supervisor: J.D.G. Correia.

B.L. Oliveira, Análogos da L-Arginina Contendo a Unidade  $fac-[^{99m}Tc(CO)_3]^+$  para Detecção in vivo do Óxido Nítrico Sintase: Química, Radioquímica e Avaliação Biológica, FC-UL, 2007. Supervisor: J.D.G. Correia.

C. Moura, Complexos de M(I) e M(V) (M = Re,  $^{99m}Tc$ ) com Ligandos do Tipo Pirazolo Relevantes para o Desenvolvimento de Radiofármacos Específicos, FC-UL, 2007. Supervisor: António Paulo.

Z. Barbosa, Modelação Computacional de Complexos Tricarbonilo de Tecnécio e Rénio com Interesse para Imagiologia do Receptor 5HT<sub>1A</sub>, FC-UL, 2007. Supervisors: A. Abrunhosa (IBILI) e I. Santos.

M. Balbina, Complexos de Radiolantanídeos com Ligandos Macrocíclicos para Terapia Paliativa de Metástases Ósseas, FC-UL 2007. Supervisor: M. Paula Campello (QIR), A. Kling (RPI)