

## Paolo Sgarbossa

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### Personal Information

- Nationality: italian
- Date of birth: 18 may 1978
- Place of birth: Castelfranco Veneto (TV), Italy

### Education

- Since genuary 2004: Ph.D student in “Chemical Science”, Università di Padova, Italy. Thesis Title: “*Synthesis of Pt(II) Complexes as Lewis Acids in Catalysis*”. Supervisor: prof. M. Basato, Università di Padova, Italy.
- **Chemist Qualifying Examination**  
First section 2003.
- 1997-2003: **Degree in Chemistry**, Università di Padova, Italy.  
Thesis Title: “*Synthesis, Coordination to Transition Metals and Reactivity of N-functionalized Isocyanide Ligands*”. Supervisors: prof. M. Basato and prof. R. A. Michelin, Università di Padova, Italy.

### Research Experience

- Synthesis and characterisation of functionalized isocyanide ligands. Coordination to transition metals such as Pt(II), Pd(II), W(0), Cr(0) and Au(I), and reactivity.
- Synthesis of Pt(II) complexes with diphosphine ligands, of the type  $[\text{Pt}(\mu\text{-OH})(\text{P-P})_2[\text{X}]_2]$ . Spectroscopic characterisation and activity in the Baeyer-Villiger oxidation of cyclic ketones.
- Synthesis of cationic platinum(II) complexes with hemilabile phosphane-phosphine oxide ligands. Spectroscopic, structural characterisation and catalytic properties in the Baeyer-Villiger oxidation of ketones with hydrogen peroxide.
- Synthesis of Pt(II) complexes bearing perfluorinated ligands of the type  $[\text{Pt}(\text{C}_6\text{F}_5)(\text{solv})(\text{P-P})]$ . Spectroscopic characterisation and catalytic activity in the epoxidation of terminal olefins.
- Synthesis of water-soluble diphosphines of the type  $\text{R}(\text{P}(\text{CH}_2\text{OH})_2)_2$ . Coordination to Pt(II).

### Work Experience

- **Grant**

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March 2003 – December 2003; theme: “*Novel Eco-efficient Oxidation Processes based on H<sub>2</sub>O<sub>2</sub> Synthesis on Catalytic Membranes*”; supervisor: prof. G. Strukul; Department of Chemistry, Università di Venezia, Italy.

## Scientific Skills

- Ability to work with high vacuum techniques using standard Schlenk techniques, under inert gas atmosphere.
- Nuclear Magnetic Resonance: multinuclear (<sup>1</sup>H, <sup>13</sup>C, <sup>31</sup>P, <sup>19</sup>F); coupling and decoupling.
- Infrared Spectrometry (far e medium IR).
- UV- Vis Spectrometry.
- Thin layer chromatography
- Gas chromatography

## Linguistic Skills

- English: reading skills, good, writing skills, good, verbal skills, good.

## Technical Skills

- Systems: Windows.
- Programs: Word, Excel, Origin, Power Point, ChemWin, ChemDraw, IsisDraw, WinNMR, gNMR, Netscape.

## Scientific Contribution

### *Publications*

- G. Facchin, R.A. Michelin, M. Mozzon, S. Pugliese, **P. Sgarbossa**, A. Tassan “Synthesis and transition metal coordination of 2-(azidomethyl)phenyl isocyanide” *Inorganic Chemistry Communication* **5** (2002) 915 - 918.
- M. Basato, G. Facchin, R.A. Michelin, M. Mozzon, S. Pugliese, **P. Sgarbossa**, A. Tassan “Transition metal coordination and reactivity of 2-(azidomethyl)-, 2-(chloromethyl)- and 2-(iodomethyl)phenyl isocyanides” *Inorganica Chimica Acta* **356** (2003) 349 - 356.
- M. Basato, F. Benetollo, G. Facchin, R.A. Michelin, M. Mozzon, S. Pugliese, **P. Sgarbossa**, S. Mazzega Sbovata, A. Tassan “The Staudinger reaction of platinum(II)- and palladium(II)-coordinated 2-(azidomethyl)phenyl isocyanide. X-ray structure of *trans*-[PtCl{CN(H)C<sub>6</sub>H<sub>4</sub>-2-CH<sub>2</sub>N(H)}(PPh<sub>3</sub>)<sub>2</sub>][BF<sub>4</sub>]-CDCl<sub>3</sub>·H<sub>2</sub>O” *Journal of Organometallic Chemistry* **689** (2004) 454 - 462.

- G. Facchin, R.A. Michelin, M. Mozzon, **P. Sgarbossa**, A. Tassan “Synthesis and cyclization reactions of platinum(II)-coordinated arsonium-substituted phenyl isocyanides,  $o$ -( $\Gamma$  R<sub>3</sub>As<sup>+</sup>-CH<sub>2</sub>)C<sub>6</sub>H<sub>4</sub>N≡C” *Inorganica Chimica Acta* **357** (2004) 3385 - 3389.
- A. Brunetta, **P. Sgarbossa**, G. Strukul “Lewis acidic complexes of platinum(II): a mechanistic study of the Baeyer–Villiger oxidation of methylcyclohexanone with hydrogen peroxide catalyzed by [(triphosPO)Pt]<sup>2+</sup> species” *Catalysis Today* **99** (2005) 227 - 232.
- R.A. Michelin, E. Pizzo, A. Scarso, **P. Sgarbossa**, G. Strukul “Baeyer-Villiger Oxidation of Ketones Catalyzed by Platinum(II) Lewis Acid Complexes Containing Coordinated Electron-Poor Fluorinated Diphosphines” *Organometallics* **24** (2005) 1012 - 1017.
- M. Basato, R.A. Michelin, M. Mozzon, **P. Sgarbossa**, A. Tassan “N-heterocyclic carbenes from transition metal coordinated functional isocyanides of the type  $o$ -(CH<sub>2</sub>Y)C<sub>6</sub>H<sub>4</sub>N≡C (Y=OSiMe<sub>3</sub>, OH; N<sub>3</sub>; AsR<sub>3</sub><sup>+</sup>)” *Journal of Organometallic Chemistry* **690** (2005) 5414 - 5420.

#### Communications

- **P. Sgarbossa**, “Sintesi, coordinazione a metalli di transizione e reattività di isonitrili *N*-funzionalizzati” G.I.C. Award 2003, VII Italian Seminar on Catalysis “New Frontiers in Molecular Catalysis” Venezia, Isola di S. Servolo 29 Giugno - 4 Luglio 2003.
- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “Baeyer-Villiger Oxidation of Ketones by Platinum(II) Lewis Acid Complexes with Coordinated Electron-Poor Diphosphines” XIV Congresso Nazionale di Catalisi GIC2004 “Le Scienze Molecolari al Servizio dell’Uomo” Lerici (La Spezia), 6 - 10 Giugno 2004
- **P. Sgarbossa**, A. Brunetta, G. Strukul, R.A. Michelin, R. Ros, E. Pizzo, S. Mazzega Sbovata, A. Tassan “Cationic Platinum(II) Complexes with Electron-Poor Diphosphines as Catalysts for the Baeyer-Villiger Oxidation of Ketones with Hydrogen Peroxide” VII Italian Seminar on Catalysis “New Frontiers in Molecular Catalysis” Venezia, Isola di S. Servolo 29 Giugno - 4 Luglio 2003
- R.A. Michelin, E. Pizzo, S. Mazzega Sbovata, **P. Sgarbossa**, G. Strukul, A. Tassan “Synthesis of Cationic Platinum(II) Complexes with Hemilabile Phosphine-Phosphine Oxide Ligands for the Baeyer-Villiger Oxidation of Ketones” XIV Congresso Nazionale di Catalisi GIC2004 “Le Scienze Molecolari al Servizio dell’Uomo” Lerici (La Spezia), 6 - 10 Giugno 2004
- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “Baeyer-Villiger Lewis Acid Oxidation Catalysts Based on Cationic Platinum(II) Complexes with Fluorinated 1,2-

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*Bis(Bisdiphenylphosphino)ethane Ligands*” IX Scuola Nazionale per Dottorandi Chimica Organometallica “La Chimica Organometallica e le Tecnologie Avanzate” Venezia, Isola di S. Servolo 27 Giugno - 1 Luglio 2004

- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “*Catalytic Synthesis of Lactones from the Baeyer-Villiger Oxidation of Cyclic Ketones with Lewis Acid Platinum(II) Complexes*” XXXII Congresso Nazionale di Chimica Inorganica Roma, 20 - 24 Settembre 2004
- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “*Selected catalytic Processes Promoted by Cationic Platinum(II) Lewis-Acid Complexes*” VI Co.G.I.C.O. Congresso del Gruppo Interdivisionale di Chimica Organometallica Cetraro (CS), 30 Settembre - 3 Ottobre 2004
- **P. Sgarbossa**, R.A. Michelin, R. Bertani, M. Mozzon, S. Mazzega Sbovata, A. Venzo, “*The Reactions of Pt(II) Nitrile Complexes with Aliphatic Primary, Secondary Amines and NH<sub>3</sub>*” VI Co.G.I.C.O. Congresso del Gruppo Interdivisionale di Chimica Organometallica Cetraro (CS), 30 Settembre - 3 Ottobre 2004
- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “*Platinum(II) Complexes with Alkyl Diphosphines as Catalysts in the Baeyer-Villiger Oxidation of Cyclic Ketones*” VIII Seminario Italiano di Catalisi “Catalisi per la Chimica Fine: una sfida per i ricercatori, un vantaggio competitivo per le industrie” Pallanza-Verbania, 19 - 24 Giugno 2005
- R.A. Michelin, E. Pizzo, **P. Sgarbossa**, A. Scarso, G. Strukul, A. Tassan “*Bis-Phosphine Monoxide (BPMO) Platinum(II) and Palladium(II) Complexes as Catalysts in Diels-Alder Reactions*” VIII Seminario Italiano di Catalisi “Catalisi per la Chimica Fine: una sfida per i ricercatori, un vantaggio competitivo per le industrie” Pallanza-Verbania, 19 - 24 Giugno 2005
- **P. Sgarbossa**, G. Greggio, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul, A. Tassan “*Synthesis of Lactones from the Baeyer-Villiger Oxidation of Cyclic Ketones with Hydrogen Peroxide Catalyzed by Bis-Triflate Platinum(II) Complexes*” XXXIII Congresso Nazionale della Divisione di Chimica Inorganica della Società Chimica Italiana Siena, 11 - 16 Luglio 2005
- **P. Sgarbossa**, R.A. Michelin, E. Pizzo, A. Scarso, G. Strukul “*Epoxidation of Terminal Olefins with Hydrogen Peroxide Catalyzed by Cationic Pentafluorophenyl Platinum(II) Complexes*” XII ISHHC - International Symposium on relations between Homogeneous and Heterogeneous Catalysis Firenze, 18 - 22 Luglio 2005

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- A. Scarso, **P. Sgarbossa**, R.A. Michelin, G. Strukul “*Mild Catalytic Oxidation of Tertiary Amines to N-Oxides with H<sub>2</sub>O<sub>2</sub> Mediated by Pt(II) Catalyst*” XII ISHHC - International Symposium on relations between Homogeneous and Heterogeneous Catalysis Firenze, 18 - 22 Luglio 2005
  - A. Scarso, **P. Sgarbossa**, E. Pizzo, R.A. Michelin, G. Strukul “*Terminal Alkenes Epoxidation with Hydrogen Peroxide Mediated by Pt(II) Catalysts*” DGMK/SCI International Conference “Oxidation and Functionalization: Classical and Alternative Routes and Sources” Milano, 12 - 14 Ottobre 2005

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