

History of Propagation of Original Citations of the Article *Racemization, Chiral Stability and Weak Interactions in the Journal of Quantitative Spectroscopy & Radiative Transfer* 102/441/2006

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*In this article we describe the chronological history of original citations (those in which the names of the authors appears just one time, regardless of self-references) of the published article: M. Cattani and J. M. F. Bassalo, **Racemization, Chiral Stability and Weak Interactions**, *Journal of Quantitative Spectroscopy & Radiative Transfer* 102, pp. 441-449, 2006 (CB: JQS&RT 102/441/2006). To realize this history we have made use of the **WEB OF SCIENCE** (access in: 08/02/2013), available through CAPES/UFPA.*

1. Introduction

The main theme of this work is related with racemization, through tunneling, of an active molecule, in which the quantum mechanics (QM) of Schrödinger is used. For that reason, the molecule is assumed to be composed as a system in two levels, the isomerism left-right of it is considered in terms of a double harmonic potential. It was also assumed that the active molecule was imbedded in a gas (liquid or solid), submitted to a perturbative potential U created by the action of the molecules. In our model we take in consideration the energy difference (ϵ) between the configurations left (L) and right (R) of the weak interactions.

2. Citation and its Propagation

2.1. CB: JQS&RT 102/441/2006

This article (CB: JQS&RT 102/441/2006) received three (3) citations, two (2) are original: 1) J. Agustian, A. H. Kamaruddin and S. Bhatia, **Single Enantiomeric Beta-Blockers The Existing Technologies**, *Process Biochemistry* 45, pp. 1587-1604, 2010 (AKB: PB 45/1587/2010); 2) I. Gonzalo and P. Bargueno, **Stabilization of Chiral Molecules by Decoherence and Environment Interactions in the Gas Phase**, *Physical Chemistry Chemical Physics* 13, pp. 17130-17134, 2011 (GB: PCCP 13/17130/2011).

2.1.1. AKB: PB 45/1587/2010

This article (AKB: PB 45/1587/2010) received eight (8) citations, five (5) are original: 1) J. G. Yu and D. S. Huang, **Simultaneous Resolution of Clenbuterol Hydrochloride Enantiomers and Propranolol Hydrochloride Enantiomers using Thin-Layer Chromatography**, *Advanced Materials Research* 236-238, pp. 1546-1548, 2011 (YH: AMR 236-238/1546/2011); 2) S. W. Holman, P. Wright and G. J. Langley, **The Low-Energy Collision-Induced Dissociation Product Ion Spectra of Protonated Beta-Blockers Reveal an Analogy to Fragmentation Behaviour under Electron Ionisation Conditions**, *Journal of Mass Spectrometry* 46, pp. 1182-1185, 2011 (HWL: JMS 46/1182/2011); 3) B. Pujala, S. Rana and A. K. Chakraborti, **Zinc Tetrafluoroborate Hydrate as a Mild Catalyst for Epoxide Ring Opening with Amines: Scope and Limitations of Metal Tetrafluoroborates and Applications in the Synthesis of Antihypertensive Drugs (RS)/(R)/(S)-Metoprolols**, *Journal of Organic Chemistry* 76, pp. 8768-8780, 2011 (PRC: JOC 76/8768/2011); 4)

X. Ju, J. Pan, H. L. Yu, C. X. Li and J. H. Xu, **Improving Pseudomonas SP Esterase Performance by Engineering Approaches for Kinetic Resolution of 2-Acetoxyphenylacetic Acids**, *Biochemical Engineering Journal* **57**, pp. 63-68, 2011 (JPYLX: BEJ 57/63/2011); 5) P. Hoyos, V. Pace and A. R. Alcantara, **Dynamic Kinetic Resolution via Hydrolase-Metal Combo Catalysis in Stereoselective Synthesis of Bioactive Compounds**, *Advanced Synthesis & Catalysis* **354**, pp. 14-15, 2012 (HPA: AS&C 354/14/2012).

2.1.1.1. YH: AMR 236-238/1546/2011 (uncited)

2.1.1.2. HWL: JMS 46/1182/2011 (uncited)

2.1.1.3. PRC: JOC 76/8768/2011

This article (PRC: JOC 76/8768/2011) received three (3) citation, two (2) are original: 1) N. Azizi and E. Batebi, **Highly Efficient Deep Eutectic Solvent Catalyzed Ring Opening of Epoxides**, *Catalysis Science & Technology* **2**, pp. 2445-2448, 2012 (AB: CS&T 2/2445/2012); 2) L. Banoth, T. K. Narayan and U. C. Banerjee, **New Chemical and Chemo-Enzymatic Routes for the Synthesis of (RS)- and (S) – Enciprazine**, *Tetrahedron-Asymmetry* **23**, pp. 1272-1278, 2012 (BNB: T-A 23/1272/2012).

2.1.1.3.1. AB: CS&T 2/2445/2012 (uncited)

2.1.1.3.2. BNB: T-A 23/1272/2012 (uncited)

2.1.1.4. JPYLX: BEJ 57/63/2011 (uncited)

2.1.1.5. HPA: AS&C 354/14/2012 (uncited)

2.1.2. GB: PCCP 13/17130/2011

This article (GB: PCCP 13/17130/2011) received two (2) original citations: 1) M. Bahrami, A. Shafiee and A. Bassi, **Decoherence Effects on Superposition of Chiral States in a Chiral Molecule**, *Physical Chemistry Chemical Physics* **14**, pp. 9214-9218, 2012 (BSB: PCCP 14/9214/2012); 2) P. J. Coles, V. Gheorghiu and R. B. Griffiths, **Consistent Histories for Tunneling Molecules Subject to Collisional Decoherence**, *Physical Review A* **86**, article number (a.n.) 042111, 2012 (CGG: PR A86/042111/2012).

2.1.2.1. BSB: PCCP 14/9214/2012 (uncited)

2.1.2.2. CGG: PR A86/042111/2012

This article (CGG: PR A86/042111/2012) received one (1) original citation: 1) J. M. Hickey, S. Genway, I. Lesanovsky and J. P. Garrahan, **Thermodynamics of Quadrature Trajectories in Open Quantum Systems**, *Physical Review A* **86**, a.n. 063824, 2012 (HGLG: PRA86/063824/2012).

2.1.2.2.1. HGLG: PRA86/063824/2012 (uncited)

3. Conclusion

The history of citations of our article published in *Journal of Quantitative Spectroscopy & Radiative Transfer* **102**, pp. 441-449, 2006, tells that it received twelve (12) original citations [of a total of seventeen (17) citations], distributed as follows, per year: 2010 (1); 2011 (5); 2012 (6), and by the journals: *Advanced Materials Research* (1); *Advanced Synthesis & Catalysis* (1); *Biochemical Engineering Journal* (1); *Catalysis Science & Technology* (1); *Physical Chemistry Chemical Physics* (2); *Journal of Mass Spectrometry* (1); *Journal of Organic Chemistry* (1); *Physical Review A* (2); *Process Biochemistry* (1); *Tetrahedron-Asymmetry* (1).

The original citations treated in this article indicate that there exist one relationship of theoretical problems involving *quantum tunneling* with problems of interest in medicine, in particular with *beta-blockers* (β -blockers) (e.g., the propranolol), which are pharmaceuticals that have in common the capacity of blocking the *adrenergic β receptors* and therefore are used in the treatment of heart diseases, and in some cases in diseases related to the nervous system disorders.