

Dr. Enrique José Baran

CURRICULUM VITAE

Personal data:

Born in Olavarría (province of Buenos Aires), Argentina, on July 10th/1940. Son of Josef Baran and Anna Windisch, both Austrian emigrants.

Married with Claudia Antonia Marcon (1973). Two daughters: Gabriela Patricia (1975) and Verónica (1978).

Languages:

Spanish, German, English (reads, writes, speaks).

French, Italian, Portuguese (understands, reads).

Education:

1947-53: Primary school, in San Jacinto, Olavarría.

1954-58: Secondary school, first four years at the *Colegio Nacional Coronel Olavarría* of Olavarría and the last one at the *Colegio Nacional José Manuel Estrada* of Quilmes (also province of Buenos Aires).

1959-67: University studies at the Faculty of Chemistry and Pharmacy (now Faculty of Exact Sciences) of the National University of La Plata, Argentina.

Academic Degrees: Químico (1963); Licenciado en Química (1964) (Speciality: Physical Chemistry and Nuclear Chemistry) and Doctor in Chemistry (1967) (Ph.D.Thesis Supervisor: Prof.Dr.Pedro J.Aymonino).

1968-70: Post-doctoral formation in Inorganic Physical Chemistry at the Institute of Inorganic Chemistry of the University of Göttingen (Germany), under the supervision of Prof.Dr.Achim Müller.

Fellowships:

1965-67: National University of La Plata (Doctoral).

1968-70: *Alexander von Humboldt Foundation* (Germany), for post-doctoral studies at the University of Göttingen, under the supervision of Prof.Dr.Achim Müller.

1974: *Alexander von Humboldt Foundation* (Germany), for the development of a research project at the Faculty of Chemistry, University of Dortmund, again under the supervision of Prof.Dr.Achim Müller.

1982: Visiting Professor at the University of Bielefeld (Germany), one month.

1985: Visiting Professor at the University of Bielefeld (Germany), one month.

- 1988: *Alexander von Humboldt* Foundation (Germany), special reinvitation for three months, to visit different German universities and Research Centres.
- 1989/91: Ministry of Education and Science of Spain; two one month stays at the Inorganic Chemistry Department of the Universidad Complutense (Madrid) in the frame of a joint research project with Spanish colleagues.
- 1995: *Alexander von Humboldt Foundation* (Germany), to participate in an International Congress in Lübeck and to visit different German Universities.

Teaching activities:

(at the Faculty of Exact Sciences, National University of La Plata)

- 1960-63: 2nd.Class Assistant of Inorganic Chemistry.
- 1964: 1st.Class Assistant of Inorganic Chemistry.
- 1965-67: Laboratory Chief of Inorganic Chemistry.
- 1970-80: Assistant Professor (“Profesor Adjunto”) of Inorganic Chemistry.
- 1980: Associated Professor (“Profesor Asociado”) of Inorganic Chemistry.
- 1981-2005 Full Professor (“Profesor Titular”) of Inorganic Chemistry (all levels).
- 2009/present: Emeritus Professor, National University of La Plata.

Organisation of numerous post-graduate courses and seminars for different Universities of Argentina as well as for Universities of Brazil, Colombia, Germany, Spain, Panamá and Uruguay.

Other academic activities:

- 1978-83: Member of the Advisory Commission for Chemistry of the Scientific Research Commission of the Province of Buenos Aires (CICPBA).
- 1983: Member of a similar Commission of the National Research Council (CONICET).
- 1984-87: Member of the Directory of CICPBA and President of the Advisory Commission of Chemistry.
- 1986-92: Member of a Scientific Advisory Commission at the German Embassy in Buenos Aires.
- 1987: Member of the Advisory Commission for the study of High Temperature Ceramic Superconductors, created by CONICET.
- 1988/99: Member of the Advisory Commission for Chemistry at CICPBA.
- 1991: International Advisor of ICFES (Colombia).
- 1992-94: Member of the Governing Council of the Faculty of Exact Sciences.
- 1994-97: Vice-President of the Advisory Commission for Chemistry and of the Evaluating Commission for Chemistry Institutes of CONICET.
- 1996: Incorporated as Academician of the Academia Nacional de Ciencias Exactas Físicas y Naturales (National Academy of Sciences). President of its Section of Chemical, Biological and Earth Sciences

(2002-continues). Secretary General (2006-2008; 2008-2010; 2010-2012; 2012-2014, 2014-2016 and 2016-2018).

- 1998: Incorporated as a Fellow to The World Academy of Sciences (TWAS). Member of its Membership Committee in Chemistry (2001/2003, 2004/2006 and 2007/2009).
- 1998/2002: Adviser of CONEAU (National Committee for the evaluation and accreditation of universities) in the area of Basic Sciences.
- 2002/2004: Member of the Qualification Board of CONICET

Research duties:

- 1970/2012: Research Fellow from CONICET; Senior Investigator (“Investigador Superior”, highest position of this career) since 1993.
- 1994/2000: Sub-Director of the Research Centre CEQUINOR (Centro de Química Inorgánica; CONICET/UNLP).
- 2001-2006: Interim Director of CEQUINOR.

Research agreements with colleagues of the Universities of Bielefeld (1979-cont.); Clermont-Ferrand (1983-84); Complutense de Madrid (1988-cont.); Stockholm (1985-93); Yamanashi (1985-93); Messina (1987-93); Rome (1988-92); Montevideo (1990-cont.); Münster (1994-2004); Vienna Technical University (2002-cont.); Federal de Minas Gerais (2001-cont.); CNRS (France) (1991-2002); CSIC (Madrid) (1991-cont.) and Academia Sinica (Taiwan) (1991-cont.).

Supervision of research activities of scientists of various National Universities (Olavarría, Bahía Blanca, San Luis, Jujuy, Tucumán, Rio Gallegos).

Awards:

- 1982: “Rafael A. Labriola”-Prize of the Chemical Society of Argentina, for young distinguished scientists.
- 1993: Konex-Foundation, Argentina: “Premio Konex de Platino” as the most distinguished scientist in the field of Inorganic and Physical Chemistry of the decade 1983/92.
- 1993: National Academy of Exact, Physical and Natural Sciences, Argentina: “Hans J. Schumacher “-Award for outstanding contributions in the fields of Inorganic and Physical Chemistry.
- 1996: Third World Academy of Sciences (TWAS) – Award in Chemistry.
- 1997: Argentine Association for the Advancement of Sciences: “Cincuentenario” -Prize of his publication *Ciencia e Investigación*.
- 2004: “Horacio A. Damianovich”-Prize of the Chemical Society of Argentina. Consecration-prize in the field of Inorganic Chemistry.

Scientific Societies:

- 1967/present: Chemical Society of Argentina.
1977/present: Physical Chemistry Association of Argentina (founding member).
Honorary Member since 2011.
1987/present: International Association of Bioinorganic Scientists.

Honours:

- 1983-92: Member of the editorial Board of *Acta Sudamericana de Química*.
1984-92: National Representative at the Commission of High Temperature and Solid State Chemistry of IUPAC.
1992/present: Member of the Editorial Board of *Latin American Journal of Pharmacy*.
1992-96: Member of the Editorial Board of *Journal of Inorganic Biochemistry*.
2006/present: Adviser of the Centre of Studies and Special Programs (CSSP) of the *Bibliotheca Alexandrina* (Alexandria, Egypt).
2007/present: Member of the Editorial Board of *Industria & Química*.
2008-12: Member of the Editorial Board of *Journal of Coordination Chemistry*.
2009/present: Member of the Editorial Board of *Trace Elements Research*.
2009: Edition of a special issue of the *Journal of the Argentine Chemical Society* (vol. **97**(1) (2009)) in his honour.
2009/present: *Emeritus Professor*, National University of La Plata.
2012: *Honorary Professor* of the National University of Tucumán.

Numerous invitations as plenary lecturer in international meetings and Conferences (Argentina, Austria, Brazil, Chile, Colombia, Germany, Panama, Portugal, Spain, Uruguay).

Scientific Production:

More than 720 publications in scientific journals, including numerous reviews and book chapters, as well as two monographs and a book on Inorganic Biochemistry (*Química Bioinorgánica*, McGraw-Hill Interamericana de España, Madrid, 1995), which was the first publication in Spanish language on this new interdisciplinary field.

More than 300 communications to scientific and academic meetings.

Supervision of fifteen approved Doctoral Theses.

[December 2016]

SOME RECENT, SELECTED, PUBLICATIONS, REVIEW ARTICLES AND BOOK CHAPTERS

PUBLICATIONS

E.J.Baran: "Vibrational Properties of Hydrogen Astatide, HAt", *Z.Naturforsch.* **59a**, 133 (2004).

M. Weil, M.Puchberger & E.J.Baran: "Preparation and Characterization of Dimercury(I) Monofluorophosphate(V), $\text{Hg}_2\text{PO}_3\text{F}$: Crystal Structure, Thermal Behavior, Vibrational Spectra and Solid-State ^{31}P and ^{19}F NMR Spectra, *Inorg.Chem.* **43**, 8330 (2004).

P.Noblía, M.Vieites, B.S.Parajón-Costa, E.J.Baran, H.Cerrecetto, P.Draper, M.González, O.E.Piro, E.E.Castellano, A.Azqueta, A.López de Cerain, A. Monge-Vega & D. Gambino: "Vanadium(V) Complexes with Salicylaldehyde Semicarbazone derivatives Bearing *in Vitro* Anti-Tumor Activity Toward Kidney Tumor Cells (TK-10): Crystal Structure of $[\text{V}^{\text{V}}\text{O}_2(5\text{-bromosalicylaldehyde semi-carbazone})]$ ", *J.Inorg.Biochem.* **99**, 443 (2005).

P.V. Monje & E.J.Baran: "Evidence of Formation of Glushinskite as a Biomineral in a Cactaceae Species", *Phytochemistry* **66**, 611 (2005).

M.H.Torre, I.Viera, G.Facchin, E.Kremer, E.J.Baran, T.Porochin, V.DiDonato, C.Irigoyen, J.Irigoyen, S.Saldanha, J.Bussi, M.Ohanian & J.Fuentes: "Incidence of Hipocupraemia in Cattle in Northern Uruguay and its Alleviation with an Injected Cu-Phenylalanine Complex", *Livestock Prod.Sci* **95**, 49 (2005).

S.B.Etcheverry, D.A.Barrio, J.Zinczuk, P.A.M.Williams & E.J.Baran: "Synthesis, Characterization and Biological Activity of Oxovanadium(IV) Complexes with Cyclic Polyalcohols", *J.Inorg.Biochem.* **99**, 2322 (2005).

P.A.M.Williams & E.J.Baran: "On the Interaction of Vanadium Species with *meso*-2,3,-Dimercaptosuccinic Acid", *Biol.Trace Elem.Res.* **109**, 189 (2006).

R.C.Mercader, E.J.Baran & M.Weil: "Spectroscopic and Magnetic Properties of $\text{Fe}^{\text{II}}_3\text{Fe}^{\text{III}}_4(\text{AsO}_4)_6$ ", *J.Phys.Chem.Solids* **67**, 1781 (2006).

E.G.Ferrer, A.Bosch, O.Yantorno & E.J.Baran: "A Spectroscopy Approach for the Study of the Interactions of Bioactive Vanadium Species with Bovine Serum Albumin", *Bioorg.Med.Chem.* **16**, 3878 (2008).

E.J.Baran: “Spectroscopic Investigation of the VO²⁺/Chitosan Interaction”, Carbohydr. Polym. **74**, 704 (2008).

J.Zinczuk, O.E.Piro, E.E.Castellano & E.J.Baran: “Structural and Spectroscopic Characterization of 2,2'-methylene-8-quinolinol dihydrochloride dihydrate”, J. Mol. Struct. **892**, 216 (2008).

G.Arrambide, D.Gambino & E.J.Baran: “Synthesis and Spectroscopic Characterization of Hydroxylamido/Amino Acid Complexes of Oxovanadium(V)”, J.Coord.Chem. **62**, 63 (2009).

M.C.D'Antonio, N.Mancilla, A.Wladimirsky, D.Palacios, A.C.González-Baró & E.J.Baran: “Vibrational Spectra of Magnesium Oxalates”, Vibrat. Spectr. **53**, 218 (2010).

P.V.Monje & E.J.Baran: “Characterization of Calcium Oxalate Biominerals in Some (Non-Cactaceae) Succulent Plant Species”, Z. Naturforsch. **65c**, 429 (2010).

A.E. Lavat, R.C. Mercader & E.J. Baran: “Crystallographic and Spectroscopic Characterization of LnFeTeO₆ (Ln = La, Pr, Nd, Sm) Materials”, J. Alloys Comps. **508**, 24 (2010).

B.S.Parajón-Costa, E.J.Baran, J.Romero, R.Sáez-Puche, G.Arrambide & D.Gambino: “Synthesis and Characterization of Bistropolonato Oxovanadium (IV and V) Complexes”, J.Coord.Chem. **64**, 57 (2011).

B.Stöger, M. Weil, E.J.Baran, A.C.González-Baró, S.Malo, J.M.Rueff, S.Petit, M.B.Lepetit, B.Raveau & N.Barrier: “The Dehydration of SrTeO₃(H₂O) - A Topotactic Reaction for the Preparation of the New Metastable Strontium Oxotellurate(IV) Phase ε-SrTeO₃”, Dalton Transact. **40**, 5538 (2011).

B.S.Parajón-Costa, R.C.Mercader & E.J.Baran: “Spectroscopic Characterization of Mixed Cation Diphosphates of the Type M^IFe^{III}P₂O₇ (with M^I = Li, Na, K, Rb, Cs, Ag)”, J. Phys. Chem. Solids **74**, 354 (2013).

I.E. León, N. Butenko, A.L. Di Virgilio, C.I. Muglia, E.J. Baran, I. Cavaco & S.B. Etcheverry: “Vanadium and Cancer Treatment: Antitumoral Mechanisms of Three Oxidovanadium(IV) Complexes on a Human Osteosarcoma Cell Line”, J. Inorg. Biochem., **134**, 106 (2014).

M. Weil, E.J.Baran, R. Kremer & E. Libowitzky: “Synthesis, Crystal Structure, and Properties of Mn(PO₃F)(H₂O)₂”, Z. Anorg.Allg. Chem. **641**, 184 (2015).

I.E.León, B.S.Parajón-Costa, C.A.Franca, S.B.Etcheverry & E.J.Baran: “A New Oxidovanadium(IV) Complex of Oxodiacetic Acid and dppz: Spectroscopic and DFT Study. Antitumor Action on MG-63 Human Osteosarcoma Cell Line”, *Biol. Trace Elem. Res.* **164**, 198 (2015).

O.E.Piro, G.A.Echeverría, E.E.Castellano, B.S.Parajón-Costa & E.J.Baran: “Structural and Spectroscopic Characterization of Isotypic Sodium, Rubidium and Cesium Acesulfamates”, *Z. Naturforsch.* **70b**, 491 (2015).

O.E.Piro, G.A.Echeverría, A.C.González-Baró y E.J.Baran: “Crystallographic New Light on an Old Complex: $\text{NaMg}[\text{Cr}(\text{C}_2\text{O}_4)_3]\cdot 9\text{H}_2\text{O}$, and Structure Redetermination of the Isomorphous Aluminum(III) Compound”, *J. Coord. Chem.* **68**, 3776 (2015).

O.E.Piro, G.A.Echeverría, A.C.González-Baró y E.J.Baran: “Crystal and Molecular Structure and Spectroscopic Behavior of Isotypic Synthetic Analogs of the Oxalate Minerals Stepanovite and Zhemchuzhnikovite”, *Phys. Chem. Min.* **43**, 287 (2016).

S.G.Jantz, L.van Wüllen, A.Fischer, E.Libowitzky, E.J.Baran, M.Weil y H.A. Höpfe: “Syntheses, Crystal Structures, NMR Spectroscopy, and Vibrational Spectroscopy of $\text{Sr}(\text{PO}_3\text{F})\cdot\text{H}_2\text{O}$ and $\text{Sr}(\text{PO}_3\text{F})$ ”, *Eur. J. Inorg. Chem* **2016**, 1121.

REVIEWS

E.J.Baran: “Model Studies Related to Vanadium Biochemistry: Recent Advances and Perspectives”, *J.Braz.Chem.Soc.* **14**, 878 (2003).

E.J.Baran: “Trace Elements Supplementation: Recent Advances and Perspectives”, *Mini Rev.Med.Chem.* **4**, 1 (2004).

E.J.Baran & V.T.Yilmaz: “Metal Complexes of Saccharin”, *Coord.Chem.Rev.* **250**, 1980 (2006).

E.J.Baran: “Vanadium Detoxification: Chemical and Biochemical Aspects”, *Chem. Biodivers.* **5**, 1475 (2008).

E.J.Baran: “Mean Amplitudes of Vibration of Molecules and Ions with Interhalogen Bonds and Related Species”, *J.Fluor.Chem.* **129**, 1060 (2008).

E.J.Baran: “Oxovanadium(IV) Complexes of Carbohydrates: A Brief Overview”, *J.Inorg.Biochem.* **103**, 547 (2009).

E.J.Baran: “Chelation Therapies: A Chemical and Biochemical Perspective”, *Curr. Med. Chem.* **17**, 3568 (2010).

E.J.Baran: “Review: Natural Oxalates and Their Analogous Synthetic Complexes”, J. Coord. Chem. **67**, 3734 (2014).

E.J.Baran: “Natural Iron Oxalates and Their Analogous Synthetic Counterparts: A Review”, Chem. Erde - Geochemistry **76**, 449 (2016).

BOOK CHAPTERS

P.V.Monje & E.J.Baran: “Plant Biomineralization” in *Advances in Plant Physiology* (H.Hemantaranjan, Ed.), Scientific Publishers, Jodhpur, Vol.**7**, pp.403-419 (2004).

E.J.Baran: “Aspectos Relativistas en la Química de los Elementos Pesados” in *Albert Einstein: A Cien Años de Sus Trabajos Más Importantes y a Ochenta de su Visita a la Argentina* (M.D.Weissmann & E.J.Baran, Eds.), Academia Nacional de Ciencias Exactas Físicas y Naturales, Buenos Aires, pp.157-179 (2005).

E.J.Baran: “Vanadium in Plants, Fungi and Bacteria: Structural Aspects and Functions” in *Advances in Plant Physiology* (H.Hemantaranjan, Ed.) Scientific Publishers, Jodhpur, Vol.**10**, pp. 357-372 (2008).

E.J.Baran & P.V.Monje: “Oxalate Biominerals” en *Metal Ions in Life Sciences* (A.Sigel, H.Sigel y R.K.O.Sigel, Eds.) J.Wiley & Sons, Chichester, Vol. **4**, pp. 219-254 (2008).

E.J.Baran: “Oxalate Degradation in Plant and Fungi: The Role of Manganese Enzymes” in *Advances in Plant Physiology* (H.Hemantaranjan, Ed.), Scientific Publishers, Jodhpur, Vol.**12**, pp. 369-389 (2011).

E.J.Baran: “Quelatoterapias: Avances Recientes y Perspectivas”, en *Aplicaciones de los Compuestos Metálicos en Medicina* (D.Gambino, V.Moreno & M.Navarro, Eds.), EAE-LAP Lambert Academic Publishing GmbH & Co KG, Saarbrücken, pp. 383-445 (2012).

E.J. Baran: “Phytosiderophores and Related Systems: Metal Uptake by Plants” in *Advances in Plant Physiology* (H.Hemantaranjan, Ed.), Scientific Publishers, Jodhpur, Vol.**14**, 1-27 (2013).

E.J. Baran: “Copper in Plants: An Essential and Multifunctional Element” in *Advances in Plant Physiology* (H.Hemantaranjan, Ed.), Scientific Publishers, Jodhpur, Vol.**15**, 373-397 (2014).