

## Shortened curriculum of Prof. Dr. Jaume Bech



### Personal Data:

**Jaume Bech . Emeritus Prof. Dr. of Soil Science of Barcelona University, Spain.**

Was born 30 January 1936 in Barcelona, Spain.

### Titles and University Degrees

He has Ma and PhD in Biological Sciences. Subject: experimental pedology. (Excel. Cum laude). Ma in Geological Sciences (Prix of Excellence). Doctoral courses. Excellent. Doctoral thesis presently underway. Both PhD's are dedicated to Soil Science. Also graduated from the Barcelona University with an Ma and PhD in Pharmacy wich subject was an History of Medicinal Clays.(Excellent cum laude).

His initiation to Soil Science was directed by Prof. A. Caballero, Rector of the University of Barcelona and by J. Albareda and W. Kubierna (Institute of Pedology, CSIC, Madrid, 1957). Bech in 1958 collaborate with Drs A. Guerra and F. Monturiol, from the same Institute, in a soil survey in Badajoz (SW Spain).

After the studies,,in 1970, with a French Government grant he did research in soil survey ( Profs. Servat,Legros, Callot, Bornand, Servat and Moinereau,ENSA, Montpellier,France) and soil micromorphology (Dr.N.Fedoroff, ENSA Thiverval-Grignon, Paris,France)..

### Teaching and Research

Soil Science Assistant (1961-67) at the Barcelona University. Lecturer in Pedology (1967-74). Full Prof. in Soil Science at Barcelona University(1975-2007). Since 2007 Prof. Emeritus in Soil Science at Barcelona Univ. Also since 1979 to 1987 was Prof. of Soils and Fertilizers at the Agricultural School of Barcelona (Politechnical University of Catalonia). His teaching includes post-graduate courses(Doctorate, PhD, Master, DEA, etc) and he supervised about 50 Ma, PhD and Agricultural Engineering end of term projects in soil science. Author of more than 400 papers, mainly in international journals.

His research focuses in rock weathering, soil genesis, soil survey, soil mapping, soil geography, Andisols, Saline Soils, Soils and Environment and health, soil pollution (heavy metals and trace elements). Wild Metallophytes Remediation (mainly phytoremediation). He was the first to discover andisols, spodosols, ultisols and alkali soils in Catalonia, NE. Spain. He was also the first to propose an hypotesis about the relationship between acid humus and goiter in 1977. Independently from this, fifteen years later a team from Taiwan obtained results wich confirmed this hypothesis. Prof. Bech was the first to find metallophytes in Perú and Ecuador and some others in Chile. From 1971 until 1986 he collaborate with ORSTOM pedologists(i.e Segalen, Lamouroux, Quantin) and from several INRA Centres (Versailles, Clermont) and

Universities (Rennes, Strasbourg and Nice) specially Profs. Millot, Ruellan, Dejou, Paquet, Chevalier and Auroseau.

Prof. Bech during his long career trained in Soil Science many graduate and post-graduate students and was involved until now such Advisor and foreign guide to researchers, professors and students from Australia, France, Italy, Germany, UK, Bulgaria, Poland, Georgia, Perú, Ecuador, Chile, Argentina, Mexico, Colombia, Brazil, Guatemala, Russia, Romania and Portugal.

Bech has visiting professor invited by the French Government in enough occasions, by the British Council (1976)-visits to Rothamsted, Reading, Aberdeen, London, York.

Guest of Polish Science Academy (Institutes of Warsaw and Katowice, 1991, 92, ... 2001), Guest of Slovakian Science Academy (Bratislava University, 1992). Sofia, Plovdiv, Tbilisi, Venezia (2001 and 2008), Moscow, Astrakhan, Belgrade (Serbia) Bucarest and Kraiova (Romania), Ulan-Ude (Siberia), Baku (Azerbaijan).

Bech taught Postgraduate courses of Soil Science in Latin America since 1994: Universities of Piura, Lima, Cuenca, Loja, Manta, Machala, Technica Metropolitana of Santiago de Chile, La Frontera, Concepción, Cajamarca, Sociedad Química de Mexico, etc.

Leader of several projects CICYT, and some of the Spanish Agency of International Cooperation-AECI (2002-03..). Coordinator of the cooperation on behalf of the University of Barcelona in the Agreement with the Vernadsky Institute of Geochemistry, Moscow, and the Institute of General and Experimental Biology, Siberian Division, Ulan-Ude, both of the Russian Academy of Sciences (2012-2014).

Co-Leader of Hispanic-Polish Expert exchange program (12 years) between the Polish Science Academy and CSIC-Barcelona University.

Visiting Professor of the Mining University of St. Petersburg, Russia (2015).

### **Main functions and responsibilities**

1974-1983 Head of Studies. University of Barcelona

1979-1986 Director of the Agricult. Engin. High School. Tech Univ. of Barcelona

1979-1987 Head of dept. of Phytotech. and Soils of the Agricult. School of Barcelona

In 1979 Bech created the discipline of Soils and Fertilizers in this School and also created a Laboratory of Soil Science and became his director until 1987.

Full Member of the Royal Academy of Sciences and Arts of Barcelona. Chair of Soil Science.

Full Member of the Royal Academy of Pharmacy of Catalonia, President of the First Section (Physics, Chemistry and Geology) since 1989 to present.

Full Member of the Royal Academy of Medicine of Catalonia (Geomedicine, soils and health).

Full Member of the Academy of Veterinarian Sciences of Catalonia (Edaphoveterinarian and environmental aspects).

Member of the Agricultural Assessment Council of the Autonomus Government (1980-84).

Copresident of the Committee of the Environment of the International Society Vinelink, Paris, France (1995).

### **Committee Member of the International Congresses:**

- International Symposium on Substrates in Agriculture, Barcelona, 1983.
- Congress Institut Pasteur, Paris, France. 1995.
- 5<sup>th</sup> IMSMTC, Plovdiv, Bulgaria, 1997.
- 6<sup>th</sup> IMSMTC, Barcelona. President of the Congress. 1999.
- 14<sup>th</sup> Latin American Soil Science Congress. Temuco. Chile. 1999.
- 2<sup>th</sup> Russian Biogeochemical School. Vernadsky Institute. Moscow. 1999.
- 7<sup>th</sup> Russian International Biogeochemical School. Vernadsky Institute Moscow, 2011.
- 7<sup>th</sup> IMSMTC, Bari, Italy. 2001.
- International Meeting for the Management of organic Residues in Mediterranean Rural Areas. Pamplona, Spain. 2001.
- 2<sup>th</sup> Congreso Iberoamericano de Física y Química Ambiental. La Habana, Cuba, 2001.
- International Symposium on Suitable use and Management of Soils in arid and semiarid regions (SUMASS) Cartagena, Spain, 2002.
- 3<sup>th</sup> Congreso Iberoamericano de Física y Química Ambiental. Tlaxcala, Mexico, 2003.
- 8<sup>th</sup> IMSMTC. Marrakech, Morocco, 2004.
- 9<sup>th</sup> IMSMTC. Aix-en-Provence, France. 2007.
- 10<sup>th</sup> IMSMTC, Beirut, Liban, 2009.
- Intern. Confer. “100 Years Bulgarian Soil Science”. 2011. Sofia, Bulgaria.
- VII International Biogeochemical School “Fundamental and innovative aspects of biogeochemistry”. Institute of Geochemistry and Analytical Chemistry by V.I. Vernadsky RAN and Astrakan State Technical University. September 2011. Moscow-Astrakan.
- Internat. Confer. Soils Azerbaijan. Baku-Gabala. 2012.
- The VI International Scientific-Practical Conference “Heavy metals and Radionuclides in the Environment” Semey State Pedagogical Institute (SGPI) the Republic of Kazakhstan.
- Internat. Scientific Conference on Innovative Strategies and Technologies in Environmental Protection. Serbian Society for Environmental Protection. Ecologica. Beograd. April 2012.
- VIII Russian International Biogeochemical School. Vernadsky Institute of Geochemistry and Analytical Chemistry of the Russian Academy of Sciences (Geokhi RAS) Moscow, Russia and Grodno State University by Yanka Kupala, Grodno, Belarus. September 2013.
- Member of Scientific Committee and Keynote Speaker of International Conference on Soil. Agricultural University of Tirana, Albania. 4-6 May 2015.
- International Congress, Vigo, Spain. Phytoremediation of Polluted Soils, 20-30 July 2014.
- Advisory Committee Member of the IX International Biogeochemical School “BIOGEOCHEMISTRY OF TECHNOGENESIS AND CURRENT ISSUES OF GEOCHEMICAL ECOLOGY”, Barnaul, Russia, August 2015.
- International Conference “FORests&FORestry: Approaches toward better facing the LIFE challenges”, Sofia, Bulgaria. October 2015.
- Member of Scientific Committee of ICASS 2016. First International Conference on Advances in Soil Sciences. Alexandria, Egypt. 2-5 May 2016.
- EUROSOIL 5, Member of the International Scientific Committee, Istanbul, Turkey. July 2016.

**President, Chairman, Officer, Convener of International Committees, Symposia, Sessions:**

- Chairperson 3.5-3 Commission Soil Degradation, Control, Remediation and Reclamation, IUSS, 2014-2018.
- Vice-Chair 1<sup>st</sup> Commission VIII (Soil and Environment) of the IUSS, 1998-2002.
- Vice-Chair Com 1.2. (Soil Geography) IUSS, 2002-2006.
- President of Committee H (Soil Pollution, Degradation and Remediation) of the Soil System Science-SSS Division of the European Geosciences Union (EGU) from their foundation in 2002 to 2011. And President of the Subdivision E (Soil Pollution and Reclamation) since 2011 to 2016.
- Official Member of the P. Duchaufour Medal Committee of SSS, EGU (from its creation to 2011).
- Convener 1<sup>th</sup> EUROSIL, Freiburg, Germany, 06 Symp. "Soil and Society".2004.
- Convener 4<sup>th</sup> EUROSIL, Bari.Italy, Symp. S12.07. Symp. "Potentially Harmful Elements in Soils".
- Convener EGU 2004 Session SSS7. "Soil pollution, degradation and remediation". Nice, France.
- Convener EGU 2005 Session SSS7. "Phytoremediation of polluted soils". Vienna, Austria.
- Convener EGU 2006 Session SSS17 "Trace elements in soils: Baseline levels and imbalance". Vienna, Austria.
- Co-convener EGU 2007 Session SSS19. "Soil remediation processes: New insights into the role of mineral surfaces and bioaccessibility of residues". Vienna, Austria.
- Convener EGU 2008. Session SSS7 "Iodine and Selenium anomalies in soils and Health". Vienna, Austria.
- Convener EGU 2009 Session SSS32 "Pedogeochemical mapping of potentially toxic elements", Vienna, Austria.
- Convener EGU 2010 Session SSS39 "Pollution and reclamation of mining site soils". Vienna, Austria.
- Convener EGU 2011 Session SSS3.3 "Phytoremediation of polluted soils", Vienna, Austria.
- Convener EGU 2012 Session SSS9.1 " Radioactive Chemical Species in Soils: pollution and remediation". Vienna, Austria.
- Convener EGU 2013 Session SSS4.3 "Soil Pollution and Reclamation: Advances in Data, Experiments and Applications"
- Convener EGU 2014 SSS8.1. Session "Soil pollution and remediation". Vienna, Austria.
- Convener 20<sup>th</sup>WCSS, C3.5-3 Symposium."Management and Reclamation of Mining Site Soils. 2014. Jeju, Korea.
- Chairperson of the Session Phytoremediation of Heavy Metals. Intern. Congress. Phytoremediation of polluted Soils, Vigo, Spain, 2014.
- Convener EGU 2015 Session SSS8.3"Remediation of polluted soils", Vienna, April 2015.
- Co-Chair of International Conference "Soil diversity: space and time". Chernivtsi National University, Ukraine, September 2015.
- Convener EGU 2016 Session SSS8.2 "Reclamation and management of polluted soils: options and case studies", Vienna, April, 2016.
- Convener EUROSIL 5 Symposium (Topic) "Detection, Risk Assessment and Remediation of Polluted Soils from Mining and Smelting Areas", Istanbul, July 2016.

## Editorial Activities

Chief-Editor of the Proceedings (1100 pp.) of the 6<sup>th</sup> IMSMTC. University of Barcelona and of the Field-Trip Guide of the same 6<sup>th</sup> IMSMTC.

Director of the Journal Archives of Agricultural School of Barcelona.

Member of the Editorial Board of “Cahiers of ORSTOM. Ser Pedologie”. Paris, France

Member of the Editorial Board of “Annals of Agrarian Sciences”, Tblisi, Georgia.

Member of the Editorial Board of “Ecologica”, Belgrade, Serbia.

Member of the Editorial Board of “Soil Science”, Bucarest, Romania.

Associate Editor of the Journal of Geochemical Exploration. Elsevier.

Managing-Guest Editor of the following Special Issues of the Journal of Geochemical Exploration:

-Sp. Iss. “Trace elements in Soils: Baseline Levels and Imbalance”. Vol. 96, Nos 2-3., 2008.

-Sp. Iss. “Selenium and Iodine Anomalies in Soils and Health”. Vol. 107, N° 2. 2010.

-Sp. Iss. “Pedogeochemical Mapping of Potentially Toxic Elements”. Vol. 109, Nos 1-3. 2011.

-Sp. Iss. “Reclamation of the Mining Site Soils” Vol. 113, 2012..

-Sp. Iss. “ Phytoremediation of polluted soils”. JGE. Vol 123, ISSN: 0375-6742, 162pp.

-Sp. Iss. “Radioactive Chemical Species in Soils: Pollution and Remediation”. Journal of Geochemical Exploration. Vol.142, pages 1-148, July 2014.

-Sp. Iss. “Potentially Harmful Elements in Soils: Concentration, Distribution, Risk Assessment and Remediation. Journal of Geochemical Exploration, 2014.

-Sp. Iss. “Soil Pollution and Reclamation”, Journal of Geochemical Exploration (in press), 2014.

-Sp. Iss. “Potentially Harmful Elements in Soil-Plant Interactions”. Journal of Soils and Sediments Springer). Vol. 14, Issue 4, 2014. Guest Editors J.Bech, M. Abreu, C.Bini, J. Gzyl, C.Pérez-Sirvent, C.Poschenrieder.

-Sp. Iss. CATENA: Reclamation of mining site soils, Part I, Guest Editor J.Bech, M.Abreu, Hyo-Taek Chon. 10 papers . Volume 136, Pages 1-196 (January 2016).

- Sp. Iss. of the JSS, “Soil pollution and Remediation”, Submission Editor Jaume Bech, Co-guest Editors: Elena Korobova, M. Manuela Abreu, Claudio Bini, Hyo-Taek Chon, Carmen Pérez-Sirvent. 24 Papers. (In press.) 2016.

- Sp. Iss. of the JSS, “ Phytoremediation of Polluted Soils: recent progress and developments. Submission Editor Jaume Bech, Co-Guest Editors: M. Luisa Andrade, M.Manuela Abreu, Flora Alonso (2016, In preparation).

- Sp. Iss. of the CATENA, “Reclamation of mining site soils” 2<sup>a</sup> Part. Guest Editor: Jaume Bech, Co-guest Editors: M. Manuela Abreu, Hyo-Taek Chon. (in preparation, 2016).

- Sp. Iss. of the JGE “Remediation of polluted soils”, Managing Guest Editor Jaume Bech, Co-Guest Editors: Elena Korobova, M. Manuela Abreu, Annamaria Lima, Domenico Cichella, Carman Pérez-Sirvent, Nuria Roca. 2016 (in preparation).

-Book. Potentially harmful elements and human health. Bini. C. and Bech. J. Editors, Springer. 2014.

- Book, Jaume Bech, Claudio Bini and Mariya Pashkevich, Eds. (2016, in preparation) “Assessment, Restoration and Reclamation of Mining influenced Soils”, 17 chapters, aprox 500 pp. ELSEVIER.

Referee of several Journals incl: Geoderma, Catena, European Journal of Soil Science, Soil, water and air pollution, The Science of total Environment, Soil Science, Environmental Engineering, etc.

### **Distinctions and Awards**

Medal of the High Agricultural School of Barcelona.  
Medal of the University of Barcelona  
Medal of the Faculty of Pharmacy, University of Barcelona.  
Medal of VV Kovalsky of the Institute Vernadsky, Russia.  
Representative Member of the CONESUP of Ecuador in Spain.  
Officier Dans “*L’Ordre des Palmes Academiques*”, France.  
1<sup>st</sup> Price Mexican Soil Science Society, Tlaxcala Congress(2003)  
1<sup>st</sup> Price International Society of Environmental Technology, Phytoremediation Meeting Leipzig, 2001. Germany.  
Diploma Honorary Convenor of SSS EGU, Vienna, 2013.  
Honorary Award, Serbian Society for the Environmental Protection, Belgrade, 2014.  
Award as Visiting Professor of the Mining University of St. Petersburg, Russia, 2015.

### **Honorary Professor/Doctor *Honoris Causae* of several Universities of different Countries**

-Honorary Prof. of University of Cuenca (Ecuador).  
-Honorary. Prof. University of Litoral,Guayaquil (Ecuador). ----  
-Honorary. Prof. University of Piura (Perú).  
-Honor Diplom. University La Frontera, Temuco(Chile).  
-Dr. Honoris Causae University of Azogues(Ecuador).  
-Dr. Honoris Causae University. Uniandes,Ecuador.  
-Dr. Honoris Causae University of. Cajamarca (Perú).  
-Dr. Honoris Causae of theAgrariaan University of Plovdiv (Bulgaria).  
-Dr. Honoris Causae of the Agrarian University of. Tbilisi (Georgia).  
-Dr. Honoris Causae of the University Miguel Hernandez, Elche (Spain)

### **Honorary Member of National Soil Science Societies**

Corresponding Member of the Hellenic Soil Science Society.  
Honorary Member of the Bulgarian Soil Science Society.  
Honorary Member of the Georgian Soil Science Society.  
Honorary Member of the Romanian National Society of Soil Science.  
Honorary Member of the Soil Science Society of Azerbaijan.  
Honorary Member of the Ecuatorian Soil Science Society  
Honorary Member of the Society of Soils Scientists named by Dokuchaev, Russian Federation.  
Member of the Jury of SSS-EGU, to award the Duchaufour Medal.

### **Books edited/written:**

Editor proceedings of Soils with Mediterranean Type of Climate 6<sup>th</sup> International Meeting, UB University of Barcelona, 1200 pp. 4-9 July 1999.  
Main author and editor, Guide Book of Field Trips, Soils with Mediterranean Type of Climate, 6<sup>th</sup> International Meeting, Barcelona 4-9 July 1999.  
Potentially harmful elements in the environment and the impact on human health. Ed. C. Bini and J. Bech. (Springer, 2014).

Chap. 7. Bech, J., Abreu, M.M., Chon, H.T., Roca, N. 2014, Remediation of potentially toxic elements in contaminated soils. In Bini and Bech Eds. Potentially harmful elements and human health. Springer.

Chap. 8. Abreu, M.M., Bech, J., Carvalho, L.C., Santos, E. 2014, Potential hazardous elements fluxes from soil to plants and the food. In Bini and Bech Eds. Potentially harmful elements and human health. Springer.

### **Some Papers published in peer-reviewed Journals**

Bech, J., Torrentó, J.R., Garrigó, J. 1988. Soil/vegetation relationship in saline marshlands (Lleida, Spain). *An. Edaf. Agrobiol.* XLII (1-2), 21-41.

Bech, J., Garrigó, J., Torrentó, J.R. (1988) Natriferals in Baix Segre (Lleida, Spain). *An. Edaf. Agrobiol.* XVII (3-4) 623-643).

Bech, J., Tobias, F.J., Quilez, D. (1993) Determination of background levels of the total lead and copper content in soils of Gavà and Viladecans (Baix Llobregat, Barcelona, Spain). 11 International Symposium on Environmental Biogeochemistry. Salamanca.

Bech, J., Rustullet, J., Garrigó, J., Tobias, F.J., Martínez, R. (1995) The iron content of some Red Mediterranean soils from NE of Spain and its pedogenic significance. *Catena* 28, 211-229.

Poschenrieder, C., Bech, J., Llugany, M. et al. (1995) Availability of Cu and Zn to plants growing on an off a malachite site. *Toxicol. And Environ. Chem.*, Vol 11, N 1, pp. 1-9.

Bech, J., Macias, F., Garrigó, J., Roca, N. 1996. Clay minerals of Soils on Schists of the Catalan Pyrenees (Spain). *Acta Universitatis Carolinae Geologica* 38 (1994), 81-90. Editum 24, 1. 1996.

Bech, J., Poschenrieder, C., Llugany, M., Barceló, J., Tume, P., Tobias, F.J., Barranzuela, J.L., Vasquez, E.R., 1997. Arsenic and heavy metal contamination of soil and vegetation around a copper mine in Northern Perú. *Sci. Total Environ.* 203, 83-91.

Bech, J. Rustullet, J., Garrigó, J. Tobias, F.J., Martínez, R., 1997. The iron content of some red Mediterranean soils from northeast Spain and its pedogenic significance. *Catena* 28, 211-229.

Tobias, F.J., Bech, J., Sánchez, P., 1997a. Statistical approach to discriminate background and anthropogenic input of trace elements in soils of Catalonia. *Water, Air, Soil Pollut.* 100, 63-78.

Tobias, F.J., Bech, J., Sánchez, P., 1997b. Establishment of the background levels of some trace elements in soils of NE Spain with probability plots. *Sci. Total Environ.* 206, 255-265.

Bech, J., Tobias, F.J., Roca, N., Rustullet, J., 1998. Trace elements in some mediterranean red soils from NE of Spain. *Agrochimica*, XLII (1-2), 26-40.

Martin, J.M., Delgado, G., Párraga, J.T., Bech, J., Delgado, R., 1998. Mineral formation in micaceous Mediterranean Red Soil of Sierra Nevada, Granada, Spain. *European Journal of Soil Science* 49, 253-268.

Zimakowska-Gnoinska, D., Bech, J., 2000. Estimation of the soil respiration using the constant pressure volumetric respirometer and the flow-through respirometer UNI-RES10. *Environ. Monitor. Assessment* 64, 583-590.

Zimakowska-Gnoinska, D., Bech, J., Tobias, F.J., 2000. Assessment of the heavy metal pollution effects on the soil respiration in the Baix Llobregat (Catalonia, NE Spain). *Environ. Monitor. Assessment* 61, 301-313.

Bech, J., Tobias, F.J., Sokolovska, M., Garrigó, J., Lansac, A., 2000. Heavy metals as restrictive factors to take into account in land capability assessment in the periurban area of Barcelona, Spain. First Intern. Conf. on Soils of Urban, Industrial, Traffic and Mining Areas. July 12-18. 2000. Essen, Germany. Proceedings vol III, 647-651.

Sokolovska, M., Bech, J., Delkov, A., 2000. Forest vegetation Peculiarities of waste banks from underground coal production. First Intern. Conf. on Soils of Urban, Industrial, Traffic and Mining Areas. July 12-18. 2000. Essen, Germany. Proceedings vol III, 833-836.

Poschenrieder, C., Bech, J., Llugany, M., Pace, A., Fenés, E., Barceló, J., 2001. Copper in plant species in a copper gradient in Catalonia (North East Spain) and their potential for phytoremediation. *Plant and Soil* 230, 247-256.

Bech, J., Poschenrieder, C., Barceló, J., Lansac, A., 2002. Plants from mine spoils in the South American Area as a potential source of germplasm for phytoremediation technologies. *Acta Biotechnologica* 22, 5-11.

Bech, J., Sokolovska, M., Petrova, L., Tonon, L., Lansac, A. 2003. Humus nature of the soils in the upper Western Andes (Southern Ecuador). 17<sup>th</sup> WCSS. Symp. N° 07, paper n° 1572, 1-7.

Martin-Garcia, J.M., Aranda, V., Gamiz, E., Bech, J., Delgado, R., 2004. Are mediterranean mountains Entisols weakly developed? The case of the Orthents from Sierra Nevada (Southern Spain). *Geoderma* 118, 115-131.

Bech, J., Tume, P., Longan, L., Reverter, F., 2005. Baseline concentrations of trace elements in surface soils of the Torrelles and Sant Climent municipal districts (Catalonia, Spain). *Environ. Monitor. Assessment* 108, 309-322.

Bech, J., Petrova, L., Sokolovska, M., Garrigó, J., 2005. Organic matter of selected Luvisols from Catalonia, Spain. *Advances in Geoecology* 36, 281-290.



Roca, N., Pazos, S., Bech, J., 2005. The role of edaphic parameters in determining heavy metals contents in soils in semiarid Catamarca, Argentina. *Advances in Geoecology* 36, 501-510.

Tume, P., Bech, J., Longan, L., Tume, L., Reverter, F., Sepulveda, B., 2006. Trace elements in natural surface soils in Sant Climent (Catalonia, Spain). *Ecol. Eng.* 27, 145-152.

Tume, P., Bech, J., Longan, L., Tume, L., Reverter, F., Bech, J., Sepulveda, B., 2006. Baseline concentrations of potentially toxic elements in natural surface soils in Torrelles (Spain). *Environmental Forensics* 7, 1-7.

Martínez-Sánchez, MJ, Navarro MC, Pérez-Sirvent C., Marimón J., Vidal, J., García-Lorenzo ML, Bech, J. (2008), Assessment of the mobility of metals in a mining impacted coastal area (Spain, Western Mediterranean), *JGE* 96:171-182.

Navarro MC, Pérez-Sirvent, C, Martínez-Sánchez, MJ, Vidal J. Tovar PJ, Bech J. (2008), Abandoned mine sites as a source of contamination by heavy metals: a case study in a semi-arid zone, *JGE*, 96: 183-193.

Bech, J., Bini, C., 2008. Special Issue. Trace elements in soils: Baseline Levels and Imbalance. Preface. *J. Geochem. Explor.* 96, nos 2-3, VII-VIII.

Tume, P., Bech, J., Tume, L., Bech, J., Reverter, F., Longan, L., Cendoya, P., 2008. Concentrations and distributions of Ba, Cr, Sr, V, Al and Fe in Torrelles Soil Profiles (Catalonia, Spain). *J. Geochem. Explor.* 96, 94-105.

Roca, N., Pazos, S., Bech, J., 2008. The relationship between WRB soil units and heavy metals content in soils of Catamarca, Argentina. *J. Geochem. Explor.* 96, Nos 2-3, 77-85.

Bech, J., Tume, P., Sokolovska, M., Reverter, F., Sanchez, P., Longan, L., Bech, J., Puente, A., Oliver, T., 2008. Pedogeochemical mapping of Cr, Ni and Cu in soils of the Barcelona Province (Catalonia, Spain): relationships with soil physico-chemical characteristics. *J. Geochem. Explor.* 96, Nos 2-3, 106-116.

Bech, J., Tume, P., Longan, L., Reverter, F., Bech, J., Tume, L., Tempio, M., 2008. Concentrations of Cd, Cu, Pb, Zn, Al and Fe in soils of Manresa, NE Spain. *Environ. Monit. Assess.* 145, 257-266.

Zhiyanski, M., Bech, J., Sokolovska, M., Lucot, E., Bech, J., Badot, P.M., 2008. Cs-137 distribution in forest floor and surface soil layers from two mountainous regions in Bulgaria. *J. Geochem. Explor.* 96, Nos 2-3, 256-266.

Tume, P., Bech, J., Sepúlveda, B., Tume, L., Bech, J., 2008. Concentrations of heavy metals in urban soils of Talcahuano (Chile): a preliminary study. *Environ. Monitor Assessment* 140, 91-98.

- Bech, J., Korobova, E., Pérez-Sirvent, C., 2010. Special Issue. Selenium and Iodine Anomalies in Soils and Health: Preface. *J. Geochem. Explor.* 107, N° 2, V-VI.
- Pérez-Sirvent, C., Martínez-Sánchez, M.J., García-Lorenzo, M.L., Molina, J., Tudela, M.L., Mantilla, W., Bech, J., 2010. Selenium content in soils from Murcia Region (SE Spain). *J. Geochem. Explor.* 107, N° 2, 100-109.
- Roca-Perez, L., Gil, C., Cervera, M.L., González, A., Ramos-Miras, J., Pons, V., Bech, J., Boluda, R., 2010. Selenium and heavy metals content in some Mediterranean soils. *J. Geochem. Explor.* 107, N° 2, 110-116.
- Bech, J., Suarez, M., Reverter, F., Tume, P., Sánchez, P., Bech, J., Lansac, A., 2010. Selenium and other trace elements in phosphate rock of Bayovar-Sechura (Perú). *J. Geochem. Explor.* 107, N° 2, 136-145.
- Bech, J., Suarez, M., Reverter, F., Tume, P., Sánchez, P., Roca, N., Lansac, A., 2010. Selenium and other trace element in phosphorites: a comparison between those of the Bayovar-Sechura and other provenances. *J. Geochem. Explor.* 107, N° 2, 146-160.
- Bech, J., Ugalde, S., Roca, N., Tonon, L., Larriva, G., Sokolovska, M., 2011. Concentration and Distribution of Heavy Metals in Andisols and Vertisols in the Azuay Andes (Ecuador). *Soil Science and Agrochemistry and Ecology* 45, N° 2, 59-64.
- Marquez Crespo, R., Martín-García, J.M., Delgado Calvo-Flores, G., Bech, J., Delgado Calvo-Flores, R., 2011. Is altered the quartz mineral in mollisols and inceptisols from the province of Granada, Spain?. *100 Years of Bulgarian Soil Science*. Sofia.
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