UNIVERSITÀ DEGLI STUDI DELL'AQUILA
Prof. Francesco Vegliò
Curriculum scientifico

(Aggiornato il 2020/10/05)

Name: Francesco

Surname: Vegliò

Birth date :16 March 1962

Birth place: Fossombrone (PU) - Italy

Nationality Italian

Office: Dipartimento di Ingegneria Industriale e dell?Informazione e di Economia, Università degli Studi di L?Aquila, 67040 Monteluco di Roio, L?Aquila, Italy

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Education: Laurea in Chemical Engineering (24/07/1987)

Actual Position: Full Professor of ? Theory and Development of Chemical Processes?

(SSD ING-IND/26)

Publications: more than 160 papers on international journals;

more than 110 monographic publications ;

more than100 communication toCongresses, *extended abstracte poster*;

6 patents (3 national patent; 2 EU patents ; 1 WO);

Research area: Experience in the preparation and management of research projects; Activity of R&D on the valorisation of raw materials and industrial wastes. Chemical and biotechnological processes; Environmental technologies; Bio-Hydrometallurgy. Firm of two spin-off companies (Ecorecycling Srl and Biomatarials & Engineering Srl)

Main topics:

§ Integrated processes in the treatment of industrial wastes;

§ Recovery of base and precious metals form industrial wastes and WEEE by chemical leaching:

- o Ittrium, Rare Earths (RE) and Zn from WEEE;
- o Mo, V, Ni, Co, RE from industrial spent catalyst;
- o Mn and Zn from spent batteries;
- o PGM from spent automotive catalyst;

§ Iron removal from quartz, kaolin and feldspar by chemical leaching: development of integrated processes;

§ Manganese recovery from low grade manganese ores by reductive leaching by using waste carbohydrates;

§ Biosorption of heavy metals by waste biomasses: application of integrated membrane processes;

§ Exploitation of agro-industrial wastes by biotechnological operations:

- o Whey recovery;
- o Waste from potato industries;

§ Bioleaching of gold-bearing sulphide ores by Thiobacillus ferrooxidans and other oxidising sulphide organisms;

§ Use of Sulphate Reducing Bacteria in environmental technologies;

§ Implementation of statistical tools for Design of Experiments and optimisation procedures;

Scientific activities: Member of the *Editorial Board* of *Hydrometallurgy* (Elsevier);

Member of the Editorial Board*International Journal of Biotechnology*

Research and Practice (IJBRP)

Member of the Editorial Board *Journal of Waste Management*

Academic activities: President of Teaching Activities in Industrial Engineering in L?Aquila University (since 2012); Vice-Rector of University of L?Aquila (Since December 2012); member of the scientific committee of the ?Foundation of University of L?Aquila? (2009-2011); Member of the International academy of ecology and protection sciences (IAELPS)"number ? 04706 - Russia

Other information:

§ Invited plenary lectures in November 2000 (TUB of Berlin) and August 2006 (6° Brazilian Meeting on Adsorption) on biosorption.

§ Responsible of the following Socrates-Erasmus Projects: MGU ? Sofia (Bulgaria); Technical University of Kosice (Slovak Republic); Suleyman Demirel University ? Isparta (Turkey); Lodz University (Poland); National Technical University of Athens (Grece); Tempus project with Montenergro (under evaluation);

§ Reviewer of E.U. projects in the ambit of VI FP (2004); Reviewer of E.U. projects in the ambit of VII FP (REG-POT-01);

§ Reviewer of the following international journals:
Hydrometallurgy, Industrial & Engineering Chemical Research, Jnl. of Hazardous Materials, Waste Management, Water Research, Environmental Science and Technology, Separation Science and Technology, European Journal of Mineral Processing and Environmental Protection, Chemosphere etc.

Recent research sponsorships

VII Framework Programme - EU (European Union)**:** ?HydroWEEE demo: recovery of base metals from spent batteries and WEEE? (2012-2016);

VII Framework Programme - EU (European Union)**:** ?HydroWEEE: recovery of base metals from spent batteries and WEEE? (2008-2010);

Puccioni Spa (Italy) ? Treatment of industrial waste waters in fertiliser industries (2012);

Italfluid Spa (Italy) ? Treatment of water produced in oil extraction activities (2012)

GSA srl (Italy)**:** ?Optimisation of a plant treatment of industrial wastes by chemical an biological processes? (2006-2008);

Manganese Metal Company (Rep. of South Africa): **?** Recovery of Mn from wastes by leaching and/or biolaeaching? (2006);

ORIM Spa (Italy): ?Recovery of Mo, V, Ni and Co from spent industrial catalysts? (2006-2008)

Mining Italiana SpA (Italy)**:** ?Technical and economical feasibility study in the leaching process of gold-bearing ores by chlorination? (2003-2005);

Mining Italiana SpA (Italy): ?Experimental analysis of a hydrometallurgical process to treat manganiferous ores by environmental friendly technologies? (2003-2005);

FIRB ? MIUR (Italy)**:** ?Integrated processes for the exploitation of manganiferous ores by acid leaching in presence of agro-industrial wastes? (2001)

PRIN 2003 ? MIUR (Italy)**:** ?Sorption and biosorption processes for toxic elements removal from wastewaters? (2003);

PRIN 2004 ? MIUR (Italy): ?Treatment of Acid Mine Drainae by chemical and bbiological processes? (2004)

PRIN 2005 ? MIUR (Italy): ?Recycling of spent batteries by hydrometallurgical operations? (2005);

Baxter Italia SpA (Italy)**:** ?Valorisation of waste proteins for haemostatic products? (2004-2007)

OCT ltd. (U.K): ?Technical feasibility of Rodochrosite leaching in sulphuric acid solutions, successive leach liquor purification and production of pure $MnSO_4$, $MnCO_3$ and g-MnO_2 for battery use? (2003);

N°3 European Projects(period. 1994-2000): MA2M-CT90-0014, BRE2-CT92-0215, BRPR-CT96-0125. Subject : Iron removal processes by hydrometallurgical operation by using sulphuric acid and/or oxalic acid leaching. Development of integrated processes and pilot plant tests.

List of publication on International Journals since 2007

1. I. De Michelis, A. Olivieri, S. Ubaldini, F. Ferella, F. Beolchini, F. Vegliò2012. Roasting and chlorine leaching of gold-bearing refractory concentrate: experimental and process analysis.
   International Journal of Mining Science and Technology (in press)

2. Innocenzi V., Vegliò F., 2012.Recovery of rare earths and base metals from spent nickel-metal hydride batteries by sequential sulphuric acid leaching and selective precipitations. Journal of Power Sources 211, 184-191.

3. Rocchetti L., Vegliò F., Kopacek B., Beolchini F., 2012.Environmental impact assessment of hydrometallurgical processes for metal recovery from WEEEs. Environmental Science & Technology (in review)

4. Beolchini F., Rocchetti L., Fonti V., Vegliò F. , 2012.An environmentally friendly process for the recovery of valuable metals form spent refinery catalysts. Resource Conservation and Recycling (in review)

5. Francesca Pagnanelli, Francesca Beolchini, Carolina Cruz Viggi, Luisa Grieco, Francesco Vegliò, Luigi Toro. 2012. Modelingofbiologicalsulphate-reductionprocessesinfixedbedcolumns.EnvironmentalModelling&Software(inreview)

6. I. De Michelis, F. Ferella, E.F. Varelli, F. Vegliò, 2012.Treatment of exhaust fluorescent lamps to recover yttrium: experimental and process analyses. Waste Management 31, 2559-2568.

7. Beolchini F., Fonti, Dell?Anno, Rocchetti, Vegliò F., 2012.Assessment of biotechnological strategies for the valorization of metal bearing wastes. Waste Management 32/5: 949-956.

8. Pennesi C., Vegliò F., Totti C., Romagnoli T., Beolchini F., 2012.Nonliving biomass of marine macrophytes as arsenic(V) biosorbents. Journal of Applied Phycology, Springer, DOI 10.1007/s10811-012-9808-2

9. F. Pagnanelli, F. Ferella, I. De Michelis, F. Vegliò, 2011.Adsorption onto activated carbon for molybdenum recovery from leach liquors of exhausted hydrotreating catalysts, Hydrometallurgy, 110, 67-72

10. F. Ferella, A. Ognyanova, I. De Michelis, G. Taglieri, F. Vegliò.2011. Extraction of metals from spent hydrotreatingcatalysts:physico-mechanicalpre-treatmentsandleachingstage.JournalofHazardousMaterials,192,176-185.

11. Barbara Bianco, Ida De Michelis, Francesco Vegliò,Fenton treatment of complex industrial wastewater: Optimization of process conditions by surface response method. Journal of Hazardous Materials 186 (2011) 1733?1738

12. Giovanni Bucci, Edoardo Fiorucci, Fabrizio Ciancetta, Francesco Veglio, Experimental Characterization and Modeling of PEM Fuel Cells under Dynamic Load Variations, WSEAS TRANSACTIONS on POWER SYSTEM, ISSN: 1790-5060, Issue 2, Volume 5, April 2010

13. Ferella F., Mazziotti Di Celso G., De Michelis I., Stanisci V., Vegliò F., Optimization of the transesterification reaction in biodiesel production. Journal: Fuel Volume: 89, Issue: 1, January, 2010, pp. 36-42

14. Francesco Ferella, Ida DeMichelis, Francesca Beolchini, Valentina Innocenzi and Francesco Veglio, 2010. Extraction of Zinc and Manganese fromAlkaline and Zinc-Carbon Spent Batteries by Citric-Sulphuric Acid Solution, Hindawi Publishing Corporation International Journal of Chemical Engineering Volume, Article ID 659434, 13 pages

15. Rosanna Mabilia; Chiara Scipioni; Francesco Vegliò; Maria Concetta Tomasi Sciano2010. Fractional factorial experiments using a test atmosphere to assess the accuracy and precision of a new passive sampler for the determination of formaldehyde in the atmosphere. Atmospheric Environment Volume: 44, Issue: 32, October, , pp. 3942-3951

16. Beolchini F., Fonti V., Ferella F., Vegliò F.,
Metal recovery from spent refinery catalysts by means of biotechnological strategies Journal: Journal of Hazardous Materials Volume: 178, Issue: 1-3, June 15, 2010, pp. 529-534

17. F. Ferella, I. De Michelis, F. Beolchini, V. Innocenzi, F. Vegliò, Extraction of zinc and manganese from alkaline and Zn-C spent batteries by citric-sulphuric acid solution. International Journal of Chemical Engineering, Volume 2010, Article ID 659434

18. S. Ubaldini, P. Fornari, V. Giuliano, A. Luptakova, I. De Michelis, F. Ferella Hydrometallurgical treatment of exhausted alkaline batteries. , Mineralia Slovaca 42, 361-364 (2010).

19. Ognyanova, A.; Ozturk, A.T.; De Michelis, I.; Ferella, F.; Taglieri, G.; Akcil, A.; Veglio?, F. . Metal extraction from spent sulfuric acid catalyst through alkaline and acidic leaching. Hydrometallurgy Volume: 100, Issue: 1-2, December, 2009, pp. 20-28

20. Tuncuk, H. Ciftci, A. Akcil, A. Ognyanova and F. Vegliò, Experimental design and process analysis for acidic leaching of metal-rich glass wastes, Waste Management Res. 2010; 28; 445 originally published online Sep 11, 2009;

21. G. Furlani, E. Moscardini, F. Pagnanelli, F. Ferella, , F. Veglio, L. Toro. Recovery of manganese from zinc alkaline batteries by reductive acid leaching using carbohydrates as reductant. Hydrometallurgy 2009, 99, 115-118.

22. F. Beolchini, V. Fonti, F. Ferella, M. Centofanti, F. VegliòBioleaching of nickel, vanadium and molybdenum from spent refinery catalysts. Advanced Materials Research 2009, Volumes 71-73, 657-660

23. Sayilgan E., Kukrer T., Ferella F., Akcil A., Veglio F., Kitis M.,
Reductive leaching of manganese and zinc from spent alkaline and zinc-carbon batteries in acidic media Journal: Hydrometallurgy Volume: 97, Issue: 1-2, June, 2009, pp. 73-79

24. Sayilgan E., Kukrer T., Civelekoglu G., Ferella F., Akcil A., Veglio F., Kitis M.,
A review of technologies for the recovery of metals from spent alkaline and zinc-carbon batteries Journal: Hydrometallurgy Volume: 97, Issue: 3-4, July, 2009, pp. 158-166

25. De Michelis Ida, Ferella Francesco, Beolchini Francesca, Olivieri Agostino, Vegliò Francesco,
Characterisation and classification of solid wastes coming from reductive acid leaching of low-grade manganiferous ore Journal: Journal of Hazardous Materials Volume: 162, Issue: 2-3, March 15, 2009, pp. 1285-1291

26. De Michelis, Ida; Ferella, Francesco; Beolchini, Francesca; Vegliò, Francesco.Reductive acid leaching of manganiferous ore: Effect of the iron removal operation on solid waste disposal
Waste Management Volume: 29, Issue: 1, January, 2009, pp. 128-135

27. F. Beolchini, V. Fonti, F. Ferella, M. Centofanti, F. Vegliò, Bioleaching of nickel, vanadium and molybdenum from spent refinery catalysts. Advanced Materials Research Volumes 71-73, 657-660 (2009).

28. Ognyanova, I. De Michelis , F. Ferella, G. Taglieri, F. Veglio, Using of industrial wastes as secondary resources for metal recovery. Chemical Engineering Transactions 17, 1425-1430 (2009).

29. E. Moscardini, G. Furlani, F. Pagnanelli, F. Ferella, I. De Michelis, F. Vegliò, F. Beolchini, L. Toro, Process for the treatment of alkaline spent batteries. Chemical Engineering Transactions 17, 281-286 (2009).

30. Pagnanelli F., De Michelis I., Di Muzio S., Ferella F., Vegliò F.,
Bioassessment of a combined chemical?biological treatment for synthetic acid mine drainage Journal: Journal of Hazardous Materials Volume: 159, Issue: 2-3, November 30, 2008, pp. 567-573

31. Olivieri, Agostino; Veglio?, Francesco.
Process simulation of natural gas steam reforming: Fuel distribution optimisation in the furnace, Fuel Processing Technology Volume: 89, Issue: 6, June, 2008, pp. 622-632

32. Ferella Francesco, De Michelis Ida, Vegliò Francesco,
Process for the recycling of alkaline and zinc?carbon spent batteries Journal: Journal of Power Sources Volume: 183, Issue: 2, September 1, 2008, pp. 805-811

33. Reverberi Andrea Pietro, Chiarioni Aldo, Vegliò Francesco, Del Borghi Adriana,
Fluctuating fast chemical reactions in a batch process modelled by stochastic differential equations Journal: Journal of Cleaner Production Volume: 16, Issue: 2, January, 2008, pp. 192-197

34. F. Pagnanelli, I. De Michelis, F. Ferella, M. Di Tommaso, L. Toro, F. Vegliò, Treatment of acid mine drainage by a combined chemical-biological column apparatus: mechanisms of heavy metal removal.
Causes and Effects of Heavy Metal Pollution, Nova Science Publishers, ISBN 978-1-60456-900-1 (2008).

35. Ognyanova, I. De Michelis , F. Ferella, F. Vegliò, Metal extraction from spent HDS catalyst by alkaline and acidic leaching. Acta Metallurgica Slovaca 14, 204-211 (2008).

36. Ferella Francesco, Prisciandaro Marina, De Michelis Ida, Veglio Francesco, Removal of heavy metals by surfactant-enhanced ultrafiltration from wastewaters Journal: Desalination Volume: 207, Issue: 1-3, March 10, 2007, pp. 125-133

37. Beolchini F., Pagnanelli F., De Michelis I., Vegliò F.,
Treatment of concentrated arsenic(V) solutions by micellar enhanced ultrafiltration with high molecular weight cut-off membrane Journal: Journal of Hazardous Materials Volume: 148, Issue: 1-2, September 5, 2007, pp. 116-121

38. Pagnanelli F., Sambenedetto C., Furlani G., Vegliò F., Toro L.,
Preparation and characterisation of chemical manganese dioxide: Effect of the operating conditions Journal: Journal of Power Sources Volume: 166, Issue: 2, April 15, 2007, pp. 567-577

39. De Michelis I., Ferella F., Karakaya E., Beolchini F., Vegliò F.,
Recovery of zinc and manganese from alkaline and zinc-carbon spent batteries Journal: Journal of Power Sources Volume: 172, Issue: 2, October 25, 2007, pp. 975-983

L?Aquila 15 Settembre 2017 Prof. Francesco Veglio?