

PERSONAL INFORMATION

Francesco Zimbardi

Sex M | Date of birth | Nationality Italian

WORK EXPERIENCE

- 24/06/2012 – current

Researcher in the field biomass for fuels and chemicals – Scientific Responsible of European research projects; Internal advisor of the Agency for Project Scouting and Funding at ENEA- Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Research Center of Trisaia, Rotondella MT, Italy
- 20/04/2010 - 24/06/2012

Head of the Laboratory Technologies and Engineering for Biomass and Solar Thermal Energy. ENEA  
Scientific responsible of European and National Research projects  
Renewable energy
- 06/09/1993 - 20/04/2010

Researcher  
ENEA  
scientific responsible of research projects  
Renewable energy
- 01/11/1989 - 05/09/1993

Junior Researcher (fellowship 2 years + external collaboration)  
National Council of Research (CNR), Combustion Institute, Naples (Italy)  
Energy
- 1/06/1989 - 31/10/1989

Junior researcher  
Pierrel; Capua (CE) Italy  
process control and development  
Farmaceutical

EDUCATION AND TRAINING

- 1/10/1983 - 21/3/1989

Graduation in Industrial chemistry  
Università degli Studi di Napoli  
Chemistry, Chemical engineering

PERSONAL SKILLS

Mother tongue Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1/2	C1/2	B1/2	B1/2	C1/2
French	A1/2	A1/2	A1/2	A1/2	A1/2
German	A1/2	A1/2	A1/2	A1/2	A1/2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user

ADDITIONAL INFORMATION

Current research interests

- Biomass for fuels and chemicals.
- Biomass pre-treatment and bioprocessing at bench and continuous scale.
- Process and life cycle assessment of biofuel production.
- Process simulation by software tools.
- Enzymatic hydrolysis and fermentation of lignocellulosic biomass.
- Green chemicals.
- Analytical chemistry of feedstocks, obtained biofuels, process bioproducts.
- Biodiesel production from vegetable oils and waste fats.
- Biomass combustion and gasification by pilot plants.
- Energy integration.

Former research interests

- From sept. 1989- sept 1993: devolatilization and combustion of coal char. Kinetics and thermodynamic aspects. Development of mathematical models for oxydation and gasification. Analytical methods to assess the topology of solids, electronic microscopy Hg porosimetry, gas adsorption/desorption techniques. Thermogravimetry.
- From june 1989-sept 1989: HPLC of fermentation media, GC of waste streams, TLC. Organicsynthesis and functionalization of natural antibiotics.
- From sept 1987 march 1989: training at the metallorganic labs of the Naples University Synthesis of pentacoordinates Pt(II) complexes. NMR, IR, Organic Synthesis.

Scientific responsible of national and european co-funded research projects

- BRISK2 "Biofuels Research Infrastructure for Sharing Knowledge" H2020
- PRIT "pretrattamento italiano" Industria 2015, Program Efficienza Energetica (current).
- BRISK "Biofuels Research Infrastructure for Sharing Knowledge" 7FP (current).
- EUROLIGNIN (Co-ordination network for lignin - standardisation, production and applications adapted to market requirements).
- TIME "Technological Improvement for ethanol production from lignocellulose".
- BIOPAL "Algae as raw material for production of bioplastics and biocomposites contributing to sustainable development of european coastal regions".
- BIOELECTRICITY "Efficient and clean production of electricity from biomass via pyrolysis oil and hydrogen utilizing fuel cells".
- BIOH2 "Production of clean hydrogen for fuel cells by reformation of bioethanol".

Evaluator of proposals and projects for National and European bodies

- Apulia Regional Agency for Technology and Innovation Extraction of young entrepreneurs (2019-2021)
- University of Camerino (IT) Competition Call Research Projects UNICAMFAR 2019
- INEA- EC H2020 program, Low Carbon Economy (2019)
- Czech Ministry of Education, Youth and Sports (2016-2018).
- Italian Ministry for the University and Research (2016-2021) proposal evaluation and project monitoring (ERA-net program) and Large industrial projects (2019-2021).
- The EUROSTARS Programme (2013-2015).
- The Portuguese Foundation for Science and Technology (National Roadmap of Research Infrastructures of Strategic Relevance, 2013-2014).
- South Moravian Program for distinguished researcher - Marie Sklodowska (Rep. Czech,) (2016-2017)
- Innovation Fund (Denmark, 2015-2016)
- TACR (Technology Agency Czech Republic, Competence Centres Program 2011-2013).
- Greek Ministry of Education, Life Long Learning and Religious Affairs ( National Action 'Cooperation 2011).
- Agency for science, innovation and technology (Lithuania, 2011).
- Agency for science, innovation and technology (Latvia, 2018)
- Italian Regions (Innovation Centres of Piemonte (2009-2015).

Peer reviewer for international scientific journals

- Biotechnology Progress; Enzyme and Microbial Technology; Journal of Environmental Management; Biotechnology for Biofuels; Bioresource Technology.

Representing of ENEA

- Deputy representing of ENEA in the EERA (European Energy Research Alliance) Bioenergy Joint program.
- Italian Biofuels Initiative – Working Group Sustainability.

## ANNEXES

- Publication list
- Patent list

### Publication list

1. UN POTENZIALE IMPIEGO DEI REFLUI OTTENUTI DA BIOMASSE VEGETALI TRATTATE CON LA STEAM-EXPLOSION NELLA DIFESA FITOSANITARIA (*A POTENTIAL USE OF WASTE OBTAINED FROM BIOMASS TREATED WITH STEAM EXPLOSION IN DEFENCE-PLANT HEALTH*). U. De Corato, F.A. Cancellara, C. Viola, E. Viola, V. Valerio, G. Arcieri, F. Zimbardi. 2013, Technical Report RT/2013/16/ENEA, ISSN/0393-3016. <http://openarchive.enea.it/handle/10840/4741>.
2. INCREASING FRACTIONATION AND DIGESTIBILITY OF LIGNOCELLULOSICS WITH AMMONIUM ACETATE. Zimbardi, F., Viola, E., Valerio, V., Arcieri, G. . Proceedings of the 21st European Biomass Conference and Exhibition, 3-7 June 2013, Copenhagen, Denmark, pp 1523-1525. <http://www.etaflorence.it/proceedings>. User: fzimbardi Pword: deSw3Cru.
3. BIOMASS FRACTIONATION BY STEAM EXPLOSION PRETREATMENT FOR SYRUP PRODUCTION. Viola, E., Zimbardi, F., Arcieri, G., Valerio, V., Alvino, E., Carnevale, M., Corrado, M., Pinto, G. Proceedings of the 21st European Biomass Conference and Exhibition, 3-7 June 2013, Copenhagen, Denmark, <http://www.etaflorence.it/proceedings> User: fzimbardi Pword: deSw3Cru.
4. GASIFICATION OF ALMOND SHELLS FOR PRODUCTION OF HYDROGEN RICH SYNGAS IN A 200 KWTH PILOT PLANT. Cerone, N., Alvino, E., Carnevale, O., Canneto, G., Contuzzi, L., Valerio, V., Villone, A., Zimbardi, F. Proceedings of the 21st European Biomass Conference and Exhibition, 3-7 June 2013, Copenhagen, Denmark, pp 820-822. <http://www.etaflorence.it/proceedings> User: fzimbardi Pword: deSw3Cru.
5. COMBUSTION OF THE HYDROLYTIC LIGNIN RESIDUE FROM 2ND GENERATION BIOREFINERY. Zimbardi, F., Cerone, N., Valerio, V., Alvino, E., Carnevale, M., Pinto, G., Prestipino, M.. Proceedings of the 21st European Biomass Conference and Exhibition, 3-7 June 2013, Copenhagen, Denmark, pp 1129-1131. <http://www.etaflorence.it/proceedings> User: fzimbardi Pword: deSw3Cru.
6. USE OF AMMONIUM ACETATE TO PRETREAT LIGNOCELLULOSIC BIOMASS. Francesco Zimbardi, Egidio Viola, Vito Valerio and Giuseppe Arcieri. Proceedings of the 35th symposium on Biotechnology for fuels and chemicals, April 29-May2, 2013 Portland (OR) USA, p.149. <http://sim.confex.com/sim/35th/webprogram/Paper24124.html>.
7. DEGRADATION OF NON-STRUCTURAL CARBOHYDRATES IN GRAPE CANE: ENZYMATIC HYDROLYSIS OF STARCH BY A NOVEL HALOPHILIC ALPHA-AMYLASE. Marco Santorelli, Alessandra Morana, Elena Ionata, Luisa Maurelli, Egidio Viola, Francesco Zimbardi, Alberto Battistelli and Francesco La Cara. Proceedings of the 35th symposium on Biotechnology for fuels and chemicals, April 29-May2, 2013 Portland (OR) USA, p.154. <http://sim.confex.com/sim/35th/webprogram/Paper24210.html>.
8. SUGAR PRODUCTION FROM LIGNOCELLULOSIC BIOMASS. Francesco Zimbardi, Giuseppe Arcieri, Egidio Viola, Vito Valerio, Elio Alvino and Massimo Carnevale. Proceedings of the 35th symposium on Biotechnology for fuels and chemicals, April 29-May2, 2013 Portland (OR) USA, p.162. <http://sim.confex.com/sim/35th/webprogram/Paper24123.html>.
9. Thermochemical characterization of the hydrolytic lignin residue from 2nd generation biorefinery. Francesco Zimbardi, Cerone Nadia, Valerio Vito and Mauro Prestipino. Proceedings of the 35th symposium on Biotechnology for fuels and chemicals, April 29-May2, 2013 Portland (OR) USA, p.103. <http://sim.confex.com/sim/35th/webprogram/Paper24147.html>.
10. SUPPRESSIVENESS OF STEAM-EXPLODED BIOMASS OF ARUNDO DONAX L. AND WHEAT STRAW AGAINST SOIL-BORNE PLANT PATHOGENS UNDER GREENHOUSE CONDITIONS. U. De Corato, E. Viola, O. Maccioni, G. Arcieri, N. Sharma and F. Zimbardi, Journal of Agricultural Science and Technology B 2 (2012) 388-405.
11. BIOMASSE VEGETALI E STEAM-EXPLOSION NELLA DIFESA FITOSANITARIA: UN'OPPORTUNITÀ PER L'EFFICIENZA ENERGETICA E LA SOSTENIBILITÀ AMBIENTALE IN AGRICOLTURA. U. de Corato, F. Cancellara, C. Viola, E. Viola, G. Arcieri, F. Zimbardi. RTENEA 2012.
12. USE OF A TWO-CHAMBER REACTOR TO IMPROVE ENZYMATIC HYDROLYSIS AND FERMENTATION OF LIGNOCELLULOSIC MATERIALS. E. Viola, F. Zimbardi, V. Valerio, A. Battafarano. Applied Energy 2012. <http://dx.doi.org/10.1016/j.apenergy.2012.04.044>
13. MATHEMATICAL TOOL FROM CORN STOVER TGA TO DETERMINE ITS COMPOSITION. Cesare Freda, Francesco Zimbardi, Egidio Viola. Appl Biochem Biotechnol (2012) DOI 10.1007/s12010-012-9756-y. <http://www.springerlink.com/content/k586568252771367/fulltext.pdf>.
14. BIODIESEL FROM FRIED VEGETABLE OILS VIA TRANSESTERIFICATION BY HETEROGENEOUS CATALYSIS. Egidio Viola , Alessandro Blasi, Vito Valerio , Ivan Guidib , Francesco Zimbardi , Giacobbe Braccio ,Girolamo Giordano. Catalysis Today 179 (2012) 185– 190.
15. BIODIESEL FROM FRIED OIL USING MICROWAVES, ULTRASOUNDS AND HETEROGENEOUS CATALYSIS. E. Viola, V. Valerio, F. Zimbardi, Proceedings of The 20th European Biomass Conference and Exhibition Milan, June 18 - 22, 2012.
16. DETOXIFICATION OF STEAM EXPLODED ARUNDO DONAX. F. Zimbardi\*, E. Viola, G. Arcieri, V. Valerio, A. Villone. Proceedings of The 20th European Biomass Conference and Exhibition Milan, June 18 - 22, 2012.
17. USE OF WASTE VEGETABLE BIOMASSES TREATED BY STEAM EXPLOSION FOR THE HORTICULTURAL CROP PROTECTION. U. De Corato, N. Sharma and F. Zimbardi. Journal of Agricultural Science and Technology B 1 (2011) 540-549. <http://www.davidpublishing.com/davidpublishing/Upfile/9/26/2011/2011092685636513.pdf>.

18. A NOVEL TWO-CHAMBER REACTOR TO IMPROVE ENZYMATIC HYDROLYSIS AND FERMENTATION OF LIGNOCELLULOSICS. E. Viola, V. Valerio, F. Zimbardi, A. Battafarano. Proceedings ISAF (International Symposium on Alcohol Fuels) Verona, Italy, 10-14 Oct. 2011
19. QUADERNO BIOMASSE E BIOENERGIA. F. Di Mario, G. Braccio, V. Pignatelli, N. Colonna, F. Zimbardi. I quaderni dell'energia, ed. ENEA, 2011 ([http://www.enea.it/it/enea\\_informa/documenti/quaderni-energia/biomasse.pdf](http://www.enea.it/it/enea_informa/documenti/quaderni-energia/biomasse.pdf))
20. AN EXPERIMENTAL INVESTIGATION OF TORREFACTION AS PRETREATMENT FOR LIGNOCELLULOSIC ETHANOL. D. Chiamonti, A. M. Rizzo, Matteo Prussi, V. Valerio, F. Zimbardi, G. Braccio, E. Viola, P. Taddei Pardelli. Proceedings ISAF (International Symposium on Alcohol Fuels) Verona, Italy, 10-14 Oct. 2011
21. MICROWAVES AND ULTRASOUNDS TO ENHANCE TRANSESTERIFICATION OF FRIED OILS WITH CAO. E. Viola, V. Valerio, F. Zimbardi. Proceedings ISAF (International Symposium on Alcohol Fuels) Verona, Italy, 10-14 Oct. 2011
22. USING BIODIESEL FUELS AS DROP-IN ALTERNATIVES IN AVIATION. Maria Teresa Petrone, Francesco Zimbardi, Giacobbe Braccio. Proceedings ISAF (International Symposium on Alcohol Fuels) Verona, Italy, 10-14 Oct. 2011.
23. SCREENING OF DIFFERENT FEEDSTOCK FOR BIODIESEL PRODUCTION BY PROCESS SIMULATION. A. Blasi, E. Viola, F. Zimbardi. Proceedings 19 European Biomass Conference and Exhibition Berlin, 10-16 June 2011, Germany. Pp 2082-2087.
24. EXPERIMENTAL DESIGN OF STEAM EXPLOSION TO OPTIMISE CARBOHYDRATE RECOVERY AND ENZYMATIC HYDROLYSIS OF WHEAT STRAW. E. Viola, F. Zimbardi, V. Valerio, A. Villone, Proceedings 19 European Biomass Conference and Exhibition Berlin, 10-16 June 2011, Germany, Pp 315-319.
25. EFFICIENCY OF SOLID BASIC CATALYSTS IN TRANSESTERIFICATION OF FRIED VEGETABLE OIL. E. Viola, I. Guidi, V. Valerio, A. Blasi, A. Battafarano, F. Zimbardi. Proceedings 19 European Biomass Conference and Exhibition Berlin, 10-16 June 2011, Germany, Pp 2059-2061.
26. GRAPHICAL METHOD TO SELECT VEGETABLE OILS AS POTENTIAL FEEDSTOCK FOR BIODIESEL PRODUCTION. Eur. J. Lipid Sci. Technol. 2011, Egidio Viola, Francesco Zimbardi and Vito Valerio. DOI: 10.1002/ejlt.201000559.
27. RAPID ANALYSIS OF BIOMASS COMPOSITION BY TGA. Cesare Freda, Francesco Zimbardi. Proceedings of the Int. Conference on polygeneration strategies 11, pp 329-334, 30th August-1 sept. 2011. Vienna. ISBN:978-3-9502754-2-1.
28. 2nd GENERATION LIGNOCELLULOSIC BIOETHANOL: IS TORREFACTION A POSSIBLE APPROACH TO BIOMASS PRETREATMENT? Biomass Conv. Bioref. (2011) 1:9–15, David Chiamonti, Andrea Maria Rizzo, Matteo Prussi, Silvana Tedeschi, Francesco Zimbardi, Giacobbe Braccio, Egidio Viola, Paolo Taddei Pardelli.
29. UTILIZZO DEL GLICEROLO SOTTOPRODOTTO DEL BIODIESEL IN CAMPO ENERGETICO (USE OF GLYCEROL BYPRODUCT FROM BIODIESEL IN THE ENERGY FIELD). E. Viola, V. Valerio, F. Zimbardi, G. Braccio, 20011, ENEA technical report ISS/0393-3016 RT/2011/2/ENEA.
30. USE OF THERMOGRAVIMETRY IN AIR TO DETERMINE THE BIOMASS COMPOSITION. Francesco Zimbardi, Cesare Freda, Vito Valerio and Egidio Viola; 33rd Symposium on Biotechnology for Fuels and Chemicals (May 2-5, 2011, Seattle, USA).
31. EFFECT OF RIPENESS AND DRYING OF ARUNDO DONAX ON ETHANOL YIELD. Egidio Viola, Francesco Zimbardi, Vito Valerio and Antonio Villone; 33rd Symposium on Biotechnology for Fuels and Chemicals (May 2-5, 2011, Seattle, USA).
32. ENZYMATIC PROCESSES FOR THE VALORISATION OF CHESTNUT SHELLS AS RENEWABLE MATERIALS FOR HIGH-VALUE PRODUCTS. Alessandra Morana, Luisa Maurelli, Margarita Kambourova, Paola Cormio, Giovanni Del Monaco, Egidio Viola, Francesco Zimbardi, Mosè Rossi and Francesco La Cara. 33rd Symposium on Biotechnology for Fuels and Chemicals (May 2-5, 2011, Seattle, USA).
33. GIANT REED (ARUNDO DONAX L. AS CELLULOSIC ENERGY CROP FOR "SECOND GENERATION" BIOETHANOL. Alessandra Morana, Luisa Maurelli, Elena Ionata, Loredana Marcolongo, Egidio Viola, Francesco Zimbardi, Mosè Rossi and Francesco La Cara. 33rd Symposium on Biotechnology for Fuels and Chemicals (May 2-5, 2011, Seattle, USA).
34. EXPERIMENTAL DESIGN OF STEAM EXPLOSION TO OPTIMISE CARBOHYDRATE RECOVERY AND ENZYMATIC HYDROLYSIS OF WHEAT STRAW. E. Viola, F. Zimbardi, V. Valerio, A. Villone. 19th European Biomass Conference and Exhibition, 6-10 June 2011, Berlin.
35. EFFICIENCY OF SOLID BASIC CATALYST IN THE TRANSESTERIFICATION OF FRIED VEGETABLE OILS. E. Viola\*, V. Valerio, I. Guidi, A. Blasi, F. Zimbardi; 19th European Biomass Conference and Exhibition, 6-10 June 2011, Berlin.
36. SCREENING OF DIFFERENT FEEDSTOCK FOR BIODIESEL PRODUCTION BY PROCESS SIMULATION. A. Blasi, E. Viola, F. Zimbardi; 19th European Biomass Conference and Exhibition, 6-10 June 2011, Berlin.
37. RAPID ANALYSIS OF BIOMASS COMPOSITION BY TGA. C. Freda, F. Zimbardi, V. Valerio, E. Viola; 19th European Biomass Conference and Exhibition, 6-10 June 2011, Berlin.
38. LIGNOCELLULOSIC BIOMASS AS CARBON SOURCE BY STEAM EXPLOSION PRETREATMENT. F. Zimbardi, E. Viola, G. Cardinale, A. Villone, V. Valerio and G. Braccio. 2009. New Biotechnology, Volume 25, Supplement 1, September 2009, Page S275 Abstracts of the 14th European Congress on Biotechnology, Barcelona, Spain 13–16 September.
39. METODO GRAFICO SEMPLIFICATO PER LA SELEZIONE DEGLI OLI VEGETALI NEI PROCESSI DI CONVERSIONE IN BIODIESEL (A GRAPHICAL METHOD FOR CHOOSING VEGETABLE OILS FOR BIODIESEL PRODUCTION). E. Viola, V. Valerio, F. Zimbardi, G. Braccio, 20011, ENEA technical report ISS/0393-3016 RT/2010/44/ENEA.
40. HYBRID COMPOSITES BASED ON FIBRES OF MARINE ORIGIN, Int. J. Materials and Product Technology, Vol. 36, Nos. 1/2/3/4, 2009. E. Chiellini, F. Zimbardi et al.
41. ETHANOL FROM EEL GRASS VIA STEAM EXPLOSION AND ENZYMATIC HYDROLYSIS. E. Viola, M. Cardinale, R. Santarcangelo, A. Villone, F. Zimbardi. (2008) Biomass and Bioenergy, 32 pp. 613-618.
42. MICROWAVE TO ENHANCE TRANSESTERIFICATION OF VEGETABLE OIL IN BIODIESEL PRODUCTION. E. Viola, F. Zimbardi et al. proceedings of 16<sup>th</sup> European Biomass Conference & Exhibition, 2008, Valencia.

43. BIOMASS GASIFICATION IN DOWNDRAFT REACTOR FOR POWER GENERATION. N. Cerone, L. Contuzzi, S. Cavaliere, F. Zimbardi, G. Braccio. Proceedings second Inter. Symposium on Energy from Biomass and Waste, Venice 2008.
44. PROCESSING CEREAL STRAWS BY STEAM EXPLOSION IN A PILOT PLANT TO ENHANCE DIGESTIBILITY IN RUMINANTS. E. Viola, F. Zimbardi, M. Cardinale, G. Cardinale, G. Braccio, E. Gambacorta. (2008). Bioresour. Technol. 99, pp 681-689.
45. SUITABILITY OF THE AGRORESIDUES FOR ETHANOL PRODUCTION VIA STEAM EXPLOSION AND ENZYMATIC HYDROLYSIS. F. Zimbardi, G. Braccio (2007). Agroindustria, , 6, pag. 91. (Atti del 1° convegno SIBA, Salerno 22-24 Ottobre 2007)
46. ACID IMPREGNATION AND STEAM EXPLOSION OF CORN STOVER IN BATCH PROCESSES. Zimbardi, F., E. Viola, E. Larocca, M. Cardinale (2007), Industrial Crops and Products, 26, 195-206.
47. NEW THERMOSTABLE ENZYMES FOR BIOETHANOL PRODUCTION FROM LIGNOCELLULOSIC MATERIALS. F. La Cara, A. Morana, E. Ionata, F. Zimbardi, 2007. 15th European biomass conference, Berlin 7-11 May, proceedings pp 228-230.
48. AN ADVANCED MODEL FOR BIOMASS STEAM GASIFICATION PROCESSES. G. Fiorenza,, J. Canonaco, M. Amelio, G. Braccio, F. Zimbardi, ib. pp.1005-1012.
49. STABILITY ASSESSMENT OF PYROLYSIS OILS AND THEIR UPGRADING. C. Freda, F. Zimbardi, V. Valerio, A. Villone and G. Braccio. Ib. pp. 1335-1338.
50. ENERGETIC AND ENVIRONMENTAL ASSESSMENT OF ETHANOL PRODUCTION FROM SUGAR AND STARCH CROPS. G. Pastore, F. Zimbardi, N. Cerone, G. Braccio. Ib. pp 247-253
51. STUDY ON THE CONVERSION OF WOOL KERATIN BY STEAM EXPLOSION. C. Tonin, M. Zoccola, A. Liugi, A. Varesino, A. Montarselo, C. Vineis, F. Zimbardi. 2006. Biomacromolecules, 7, 3499-3504.
52. LIFE CYCLE ASSESSMENT OF ETHANOL FROM LIGNOCELLULOSIC, Pastore, G. Braccio, G. Cardinale, F. Zimbardi; 14th European biomass conference & exhibition, 17-21 october, 2005 Paris.
53. BIO-ETHANOL FROM SEAGRASS, Viola\*, F. Zimbardi, M. Cardinale, R. Santarcangelo, 14th European biomass conference & exhibition, 17-21 october, 2005 Paris.
54. CHARACTERIZATION OF DIFFERENT BIOMASSES AND THEIR PYROLYSIS OILS, Freda, F. Zimbardi, V. Valerio, 14th European biomass conference & exhibition, 17-21 october, 2005 Paris.
55. METHANE PRODUCTION BY THE MARINE ALGAE ULVA ARMORICANA D. Cuna \*, M. Cardinale, E. Viola, F. Zimbardi, 14th European biomass conference & exhibition, 17-21 october, 2005 Paris.
56. ACID IMPREGNATION OF LIGNOCELLULOSIC BIOMASS. E. Viola, V. Larocca, M. Cardinale, A. Villone and F. Zimbardi. 2nd World Conference on Biomass For Energy, Industry and Climate Protection, 10-14 may 2004, Rome.
57. ETHANOL PRODUCTION VIA STEAM EXPLOSION: ENZYMES RECYCLING IN SIMULTANEOUS SACCHARIFICATION AND FERMENTATION PROCESS. M. Cardinale, E. Viola, F. Zimbardi. 2nd World Conference on Biomass For Energy, Industry and Climate Protection, 10-14 may 2004, Rome.
58. ETANOLO DA BIOMASSA LIGNOCELLULOSICA, F. Zimbardi, E. Ricci, E. Viola, G. Braccio, Energia Ambiente e Innovazione (2002) vol 5, pp 25-32.
59. TECHNOECONOMIC STUDY ON STEAM EXPLOSION APPLICATION IN BIOMASS PROCESSING.
  1. F. Zimbardi, E. Ricci, G. Braccio, Applied Biochemistry and Biotechnology, Humana press (2002), vol 98-100, pp 89-99.
60. ETANOLO DA BIOMASSE LIGNOCELLULOSICHE. PRODUZIONE DI ETANOLO DA PAGLIA DI GRANO MEDIANTE PRETRATTAMENTO DI STEAM EXPLOSION, IDROLISI ENZIMATICA E FERMENTAZIONE. E. Ricci, E. Viola, F. Zimbardi, G. Braccio, 2001, Rapporto Tecnico ENEA.
61. STATE OF THE ART ON BIOETHANOL PRODUCTION. I. De Bari, E. Viola, F. Zimbardi, G. Braccio, M. Cantarella, F. Alfani 2001, Rapporto Tecnico ENEA.
62. STEAM EXPLOSION: A VIABLE TOOL TO EXPLOIT LIGNOCELLULOSIC RESOURCES, E. Viola, I. De Bari, G. Cardinale, M. Cardinale, F. Zimbardi and G. Braccio, 2001, XII Congresso Nazionale della Divisione di Chimica Industriale, Fiera di Milano, 2-4 Ottobre.
63. ETHANOL PRODUCTION AT FLASKS AND PILOT SCALE FROM CONCENTRATED SLURRIES OF STEAM EXPLODED ASPEN. I. De Bari, E. Viola, M. Cardinale, F. Zimbardi, G. Cardinale and G. Braccio, Industrial & Engineering Chemistry Reseach (Editore Dr. Donald R. Paul, Department of Chemical Engineering (C0400) The University of Texas at Austin.
64. DISTILLATION OF FERMENTATION BROTH OBTAINED FROM STEAM EXPLODED WOOD CONVERTED IN ETHANOL. F. Zimbardi, E. Viola, I. De Bari, P. Garzone, G. Braccio, G. Cornacchia, M. Cardinale, G. Cardinale, 2001, 23rd Symposium on Biotechnology for Fuel and Chemicals, Colorado May 6-9.
65. PRODUZIONE DI MATERIALI FIBROSI E BIOCARBURANTI DA BIOMASSE VIA STEAM EXPLOSION, E. Viola, G. Cardinale, M. Cardinale, I. De Bari, E. Ricci, F. Zimbardi, 2001, Workshop Valorizzazione dei Residui Agricoli della Basilicata, 10 Gennaio, Potenza.

66. GRAFT COPOLYMERS OF LIGNIN FROM STRAW WITH 1-ETHENYLBENZENE: SYNTHESIS AND CHARACTERIZATION. C. Bonini, M. D'Auria, G. Mauriello, R. Puccianriello, R. Teghil, D. Tofani, L. Viggiani, D. Viaggiano, F. Zimbardi. *J. Of Applied Polymer Science*, 2001, pp 72-79. John Wiley and ions.
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68. MIGLIORAMENTO DELL'UTILIZZO DELLE BIOMASSE MEDIANTE TRATTAMENTO DI STEAM EXPLOSION. F. Zimbardi, E. Viola, E. Ricci, 2000, *L'ambiente*, periodico tecnico scientifico di cultura ambientale, 6, pp. 8-12, Ranieri editore.
69. PROCESS OPTIMIZATION IN BIOCONVERSION OF LIGNOCELLULOSICS INTO ETHANOL. F. Zimbardi, E. Ricci, E. Viola, D. Cuna, G. Cardinale, M. Cardinale, 2000, 1st World Conference on Biomass for Energy and Industry, 5-9 Giugno, Siviglia.
70. STEAM EXPLOSION PRETREATMENT OF COTTON STALK. Y.M.Fahmy, F. Zimbardi, E. Viola, E. Ricci, M. Cardinale, E. Elzanati, 1st World Conference on Biomass for Energy and Industry, 5-9 Giugno 2000, Siviglia.
71. STEAM EXPLOSION OF STRAW IN BATCH AND CONTINUOUS SYSTEMS, F. Zimbardi, D. Viggiano, M. Demichele, D. Cuna, G. Cardinale. *Applied Biochemistry and Biotechnology*, 1999, 77-79, pp 117-132, Humana press.
72. STUDI E RICERCHE SULLA LIGNINA. F. Zimbardi, D. Viaggiano, 1999, *Energia Ambiente Innovazione*, 6, pp.53-60, ENEA ed.
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