

## INFORMAZIONI PERSONALI

Senneca Osvalda

ESPERIENZA  
PROFESSIONALE

01/2007

**Primo Ricercatore**

Istituto di Ricerche sulla Combustione, CNR, Napoli (Italia)

Dal 2018 referente dell'area progettuale del CNR-“Tecnologie energetiche a basse emissioni” precedentemente responsabile della linea dell'IRC-“Processi e Tecnologie per i Combustibili Fossili, Energia Pulita e Produzione di Chemicals” e (2013-2016) della linea: “Studio dei processi e tecnologie di combustione a basso impatto ambientale”

Dal 2015- rappresentante CNR al gruppo ERANET per la cattura della CO<sub>2</sub>

2019–alla data attuale

**Chair in Thermochemical Carbon Conversion (Gastprofessorin)**

Dipartimento LEAT, RUB University, Bochum (Germania)

<http://www.ie.rub.de/webseitecs5/Institut/tcc%20-%20englisch.html>

14/01/2001–01/01/2007

**Ricercatore**

Istituto di Ricerche sulla Combustione, CNR, Napoli (Italia)

01/2000–05/2001

**Titolare di assegno di ricerca presso il Dipartimento di Ingegneria Chimica, ambito disciplinare Impianti Chimici**

Università Federico II, Napoli (Italia)

03/1998–11/1999

**Contratti di ricerca**

Università Federico II, Napoli (Italia)

“Sottomodelli cinetici e termodinamici per gassificatori e combustori di carbone a letto fluido circolante”.

“Progettazione e supporto alla realizzazione di un reattore sperimentale solido gas a singola particella levitata”.

1995–1998

**Dottoranda di ricerca**

Università Federico II, Napoli (Italia)

Effetti dell'esposizione a temperature elevate sulla reattività di carboni fossili in processi di gassificazione.

Relatore: Prof. Piero Salatino; Comitato Scientifico: Prof. A. D'Alessio e Prof. A. Sarofim, del M.I.T. (U.S.A.).

02/1994–04/1995

**Ingegnere di processo**

FIAT IMPRESIT sistemi ambientali, Casalnuovo (Italia)

ISTRUZIONE E FORMAZIONE

- 05/1998 **Dottorato di ricerca in Ingegneria Chimica**  
Università Federico II, Napoli
- 01/1994 **Laurea in Ingegneria Chimica, 110 e lode**  
Università Federico II, Napoli (Italia)
- 07/1988 **Maturità classica, 60/60**  
Liceo Umberto I, Napoli (Italia)
- 2018 **Corso: "eU-maps: il modello integrato di Europrogettazione e project management, per progettare, gestire e rendicontare i fondi europei", 10CFU**  
Università degli Studi Tor Vergata
- 2018 **Certification ISIPM-Base, Istituto Italiano di Project Management**
- 2019 **La gestione responsabile dei conflitti in ambito ispettivo**  
John Cabot University

COMPETENZE PERSONALI

Lingua madre italiano

Lingue straniere

	COMPRESIONE		PARLATO		PRODUZIONE SCRITTA
	Ascolto	Lettura	Interazione	Produzione orale	
inglese	C2	C2	C2	C2	C2

Certificate of Proficiency in English, Cambridge University

Livelli: A1 e A2: Utente base - B1 e B2: Utente autonomo - C1 e C2: Utente avanzato  
 Quadro Comune Europeo di Riferimento delle Lingue

ULTERIORI INFORMAZIONI

**MAJOR ACHIEVEMENTS AND APPOINTMENTS**

- 2019 "Gastprofessor" RUB University (DE) (Cerimony 11.7.2019)
- 2018 Coordinator of the Project area "Low emission energy technologies" for the Department of Engineering, IT, Energy and Transport of CNR
- 2017 Associate to SFB/TR 129 Oxyflame project 2017
- 2016 Visiting International Professor grant of RUB (DE)
- 2016 Responsible of the Research Area of CNR-"Processi e Tecnologie per i Combustibili Fossili, Energia Pulita e Produzione di Chemicals" ("Processes and technologies for fossil fuels, clean energy and chemicals production")

2013-2016 Responsible of the Research Line of CNR: "Studio dei processi e tecnologie di combustione a basso impatto ambientale" (Processes and technologies for clean coal combustion")

2015 CNR Representative in the ERANET for CO<sub>2</sub> capture

2013 Passed the recruitment procedure ERCEA/SNE/078/2013 for a position as Research Program Expert and Policy Expert at The European Research Council Executive Agency

1996 Prize K8 (Kuwait refinery and chemistry)

1995 Research stay at M.I.T. (Prof. Adel Sarofim)

1991 Enichem prize for Students of Chemical Engineering

2018 *Best project of the eU-maps edition 2018*

2019 Traveling grant of the Chinese Academy of Science (July 2019)

2019 Best paper award, ISCC 9, Qingdao, China

*External member of foreign Universities:*

Department: MATERIALS SCIENCE AND ENGINEERING of UNIVERSITY OF IOANNINA (2017)

- Department of ENVIRONMENTAL ENGINEERING ; University of Western Macedonia (2017)
- Department of MECHANICAL ENGINEERING ; University of Western Macedonia (2016)
- Tampere University of Technology, Finland, PhD candidates
- The University of Newcastle, Australia, PhD candidates
- Opponent of PhD thesis defense of Teresa Berdugo Vilches, Chalmers University (2018)
- Examiner of PhD thesis of Xujun Che, Curtin University of Western Australia (2019)

*Participation to International panels, commissions, technical groups, scientific boards*

- International member of board for 9<sup>th</sup> ISCC, international symposium on coal combustion, China, July 21-24, 2019
- Scientific committee of the 12<sup>th</sup> European conference on industrial furnaces and boilers (INFUB-12), which will be held in Porto – Portugal. Dates: 14-17 April 2020.
- Table of the Italian *Council of Ministers* on decarbonization technologies GdL2 (2017)
- CNR table on LOW CARBON (since 2015)
- EERA CO<sub>2</sub>- European Energy Research Alliance, Carbon capture and storage (since 2015)-
- EURACOAL (European Association for Coal and Lignite) workshops (2015-2016-2017)
- IEA Bioenergy, Task 33 – Thermal Gasification of Biomass 2014
- UEFISCDI (The Ministry of National Education and Scientific Research and its Executive Agency for Higher Education, Research, Development and Innovation Funding (since 2014)
- IEA-FBC Meeting (2012)

*Responsibility of CNR-IRC International collaborations*

- CIEMAT (The Research Center for Energy, Environmental and Technology (CIEMAT), Dr Jose Maria Sanchez Hervàs and Dr Marta Marono Buján).

- Prof. Dr. Sait KIZGUT Bülent Ecevit Üniversitesi, Department of Mining Engineering, Turchia
- Prof. Edward J. Anthony, Cranfield University, Center of Combustion and CCS
- Prof. Despina Vanvuka, Technical University of Chrete
- Prof. Ezra Bar Ziv, Ben-Gurion University Israel
- Prof. Viktor Scherer (RUB)
- Huaneng Clean Energy Reserach Institute (Dr. Ye Yuan) -
- Tsinghua University (Dr. Yu Shi/ Prof. Shuiqing Li)
- Chinese Academy of Agricultural Engineering (Dr. Zonglu Yao)

#### *Key notes lectures*

- Heraeus seminar “Fuels, processes, and combustion physics in the energy transformation”.(8.-12. March 2020) Physikzentrum Bad Honnef (<https://www.dpg-physik.de/dpg/pbh/index.html?lang=en&>).
- 7th Sino-Australian Symposium on Advanced Coal and Biomass Utilisation Technologies, Wuhan, China 3-6 December 2019.
- Conferenza Dipartimento DIITET - AS 11 “Ingegneria Industriale e Civile (AP 17 Tecnologie energetiche a basse emissioni: “Energy transition: potential synergies and impact of DIITET”, 16 Ottobre 2018
- SFC Annual Program Conference, Luleå, February 27-28, 2018
- Tsinghua University (China) on clean coal technologies (1 plenary talk at the Clean Energy Forum and 4 satellites lectures), 2017
- Euracoal workshop CSM Rome 5.5.2017 Presentation of coal research activities in Italy
- 11th European Conference on Industrial Furnaces and Boilers (INFUB-11), 18-21 april 2017  
Oxidation of solid carbon – what we know and what we need to know.
- 1<sup>st</sup> International Workshop on Oxy-Fuel Combustion, 9-11 Feb. 2016  
Relevance of structure and reactivity of solid fuels in combustion systems
- Joint meeting: of the French and Italian sections of the Combustion Institute and IFRF- 23, 24 April 2014: Oxidation of carbon, what we know and what we still need to know
- IEA-Bioenergy Meeting– Focus: Thermal Gasification of Biomass, 13-15 May 2014  
Gasification kinetics of biogenic materials and wastes
- Oxyflame meeting, Darmstadt November 2013  
Research activities of IRC-CNR in oxy/coal combustion
- Meeting IFRF, 31st Topic Oriented Technical Meetings dedicated to Oxy-combustion technologies and applications 18-19/6/13  
Heterogeneous phenomena in oxy-coal combustion
- IEA-FBC Meeting, Focus: OxyFuel Combustion in FBC, 3 June 2012  
On-going Activities on Oxy-firing Combustion in Naples
- ENEL CRT Pisa 3.12.1996  
Kinetics of coal gasification Conferenza Dipartimento DIITET - AS 11 “Ingegneria Industriale e Civile”  
Auditorium dell’Area della Ricerca CNR di Napoli  
Via Pietro Castellino, 111 - Napoli  
16 Ottobre 2018

#### *Editorial activity*

- Guest editor in the upcoming special issue in Renewable and Sustainable Energy Reviews on

Clean fuel conversion (2019-2020)

- Guest editor in the special issue in FUEL of the ISCC-9, 2019
- Guest editor in the special issue of Frontier in Energy of the ISCC-9 2019
- Colloquium coordinator 38<sup>th</sup> International Symposium on Combustion, *Colloquium :SOLID FUELS*
- Co-Chair 37<sup>th</sup> International Symposium on Combustion, *Colloquium : Solid Fuel Combustion* including fundamental aspects related to pyrolysis, oxidation, gasification, and ash formation from coal, biomass, and wastes, as well as combustion of propellants and metals.
- *including fundamental aspects related to pyrolysis, oxidation, gasification, and ash formation from coal, biomass, and wastes, as well as combustion of propellants and metals.*
- INTERNATIONAL SCIENTIFIC COMMITTEE of the 12TH EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS (INFUB-12), Porto – Portugal. 14-17 April 2020
- International member of board for 9<sup>th</sup> ISCC, international symposium on coal combustion, China China, July 21-24, 2019
- Organizer of 1<sup>st</sup> workshop 1st EERA CCS Workshop for Proposal preparation for EU calls 2018-2019, Naples 5-6 February 2018
- Co-Chair of the 11th Mediterranean Combustion Symposium (MCS11), Colloquium: HETEROGENEOUS COMBUSTION AND PYROLYSIS, including fundamental aspects of pyrolysis, gasification, and combustion of solid fuels (e.g., coal, char, and biomass) as well as combustion of propellants and catalytic combustion
- Local organizing committee, JOINT MEETING THE GERMAN AND ITALIAN SECTIONS OF THE COMBUSTION INSTITUTE 23-26 May, 2018
- Member of Scientific Committee of 21st International Coal Congress and Exhibition of Turkey (ICCET 2018),
- Co-Chair 10th Mediterranean Combustion Symposium (MCS10), 2017. *Colloquium: REACTION KINETICS AND REDUCED MECHANISMS, including the chemistry of hydrocarbons, biofuels, oxygenated fuels, and reduction methodologies*
- Topical Coordinator 21st International Conference on Fluidized Bed Combustion 2012, *Session area: Ash and spent solids*
- Board of Journal of Sustainable Mining, Elsevier
- Board Journal of fuels, 2314-601X Hindawi Publishing Corporation.

## PUBLICATIONS

## PATENTS

Plant and process for the looping combustion of solid carbon containing fuels

WO 2010/026259 A2

Owner: Consiglio Nazionale delle Ricerche, Italy

Integrated system for re-activation and re-circulation of light ashes having a high content of unburnt matter, WO2010140109A2

Owner: Magaldi Industrie S.R.L.

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## PAPERS IN JOURNALS

O. Senneca, P. Russo, P. Salatino, S. Masi,

The relevance of thermal annealing to the evolution of coal char gasification reactivity

Carbon, 35 141 (1997)

P. Salatino, O. Senneca, S. Masi,

Gasification of a coal char by oxygen and carbon dioxide  
Carbon, 36 443 (1998)

O. Senneca, P. Salatino and S. Masi,  
Microstructural changes and loss of gasification reactivity of chars upon heat treatment  
Fuel, 77 1483 (1998)

O. Senneca, P. Salatino, R. Chirone,  
A fast-heating-rate thermogravimetric study of the pyrolysis of scrap tyres,  
Fuel, 78 1575 (1999)

P. Salatino, O. Senneca, S. Masi,  
Assessment of thermodeactivation during gasification of a bituminous coal char  
Energy & Fuels, 13 1154 (1999)

O. Senneca, P. Salatino, S. Masi,  
The influence of heat treatment and weathering on the gasification reactivity of Montana lignite  
Proceedings of the Combustion Institute, 27 2991(1998)

P. Salatino, O. Senneca, L. Tognotti,  
Loss of gasification reactivity of fossil and non fossil fuels  
La Chimica e l'Industria, 81 865 (1999)

T. Livneh, E. Bar-Ziv, O. Senneca, P. Salatino,  
Evolution of reactivity of highly porous chars from Raman microprobe spectrometry  
Combust. Sci. and Tech. 153 65 (2000)

E. Bar-Ziv, A. Zaida, P. Salatino, O. Senneca,  
Diagnostics of Carbon Gasification by Raman Microprobe Spectroscopy  
Proceedings of the Combustion Institute, 28 2369 (2000)

O. Senneca, P. Salatino.  
Loss of gasification reactivity towards O<sub>2</sub> and CO<sub>2</sub> upon heat treatment of carbons,  
Proceedings of the Combustion Institute 29 485 (2002)

O. Senneca, R. Chirone, S. Masi, P. and P. Salatino  
A Thermogravimetric study of nonfossil solid fuels. 1. Inert pyrolysis  
Energy & Fuels 16 653 (2002)

O. Senneca, R. Chirone, S. Masi, P. and P. Salatino,  
A Thermogravimetric study of nonfossil solid fuels. 2. Oxidative pyrolysis and char combustion,  
Energy & Fuels 16 661 (2002)

R. Chirone, P. Salatino, F. Scala, O. Senneca  
Cigarette combustion: priorities and perspectives concerned with the development of research in the field

ETIMOS 1 40 (2003)ISSN: 1723-3607

O.Senneca, P. Salatino, S. Masi,  
Heat treatment-induced Loss of combustion reactivity of a coal char: the effect of exposure to oxygen  
Experimental Thermal and Fluid Science, 28 (7) 735 (2004)

O. Senneca, R. Chirone, P. Salatino,  
Oxidative pyrolysis of solid fuels,  
Journal of Analytical and Applied Pyrolysis 71 959 (2004)  
O.Senneca , P. Salatino, S.Masi ,  
The influence of Char Surface oxidation on Thermal Annealing and Loss of Combustion Reactivity  
Proceedings of the Combustion Institute 30 (Pt. 2), 2223-2230 (2005)

O. Senneca, P. Salatino. Overlapping of heterogeneous and purely thermally activated solid-state processes in the combustion of a bituminous coal.  
Combustion and Flame 144(3), 578-591 (2006)

O. Senneca ,  
Kinetics of pyrolysis, combustion and gasification of three biomass fuels ,  
Fuel Processing Technology 88 87-97(2007)

O.Senneca, R.Chirone, P.Salatino, L.Nappi ,  
Patterns and kinetics of pyrolysis of tobacco under inert and oxidative conditions ,  
Journal of Analytical and Applied Pyrolysis 79(1-2) 227-233 (2007)

O. Senneca, S.Ciaravolo, A. Nunziata,  
Composition of the gaseous products of pyrolysis of tobacco under inert and oxidative conditions.  
Journal of Analytical and Applied Pyrolysis 79(1-2), 234-243 (2007)

O.Senneca, F.Scherillo , A.Nunziata ,  
Thermal degradation of pesticides under oxidative conditions.  
Journal of Analytical and Applied Pyrolysis 80(1), 61-76 (2007),

O.Senneca, P.Salatino, D.Menghini ,  
The influence of thermal annealing on oxygen uptake and combustion rates of a bituminous coal char  
Proceedings of the Combustion Institute 31 1889-1895 (2007)

O. Senneca  
Burning and physico-chemical characteristics of carbon in ash from a coal fired power plant  
Fuel 87(7), 1207-1216 (2008)

O. Senneca, R. Solimene, R. Chirone, P. Salatino,  
Smoldering combustion in cigarette smoking and generation of combustion by-products  
Environmental Engineering Science 25 (10) pp.1389-1398 (2008)

O. Senneca , S. Russo, R. Chirone  
Primary fragmentation of coal particles at high heating rate ,

Chemical Engineering Transactions, 18, 569-574 (2009)

O. Senneca ,  
Characterisation of meat and bone mill for coal co-firing,  
Fuel 87, 3262-3270(2008)

P.Salatino, O. Senneca ,  
Preliminary assessment of a novel concept of chemical looping combustion of carbon ,  
Industrial & Engineering Chemistry Research 48, 102-109 (2009)

O. Senneca, C. Allouis, R. Chirone, S. Russo,  
Set up of an experimental apparatus for the study of fragmentation of solid fuels upon severe heating ,  
Experimental Thermal and Fluid Science, 34 (3), 366-372 (2010)

O.Senneca, P. Salatino,  
A semi-detailed kinetic model of char combustion with consideration of thermal annealing,  
Proceedings of the Combustion Institute 33 (2), pp. 1763-1770 (2011)

O. Senneca, P.Salatino, R.Chirone, L. Cortese, R. Solimene,  
Mechanochemical activation of high-carbon fly ash for enhanced carbon reburning ,  
Proceedings of the Combustion Institute 33 (2), pp. 2743-2753 (2011)

O. Senneca, M. Urciuolo, R. Chirone, D. Cumbo,  
An experimental study of fragmentation of coals during fast pyrolysis at high temperature and  
pressure,  
Fuel 90 (2011) 2931–2938

Senneca O., Salatino P., Sorrenti R,  
Beneficiacion of coal fly ashes by oxygen chemisorptions  
Experimental thermal and fluid science 43 (2012) 76-81

Senneca O, Cortese L.,  
Kinetics of coal oxy-combustion by means of different experimental techniques,  
Fuel 102 (2012) 751-759

Senneca O., Salatino P. ,  
Assessment of the thermochemistry of oxygen chemisorption and surface oxide desorption during  
looping combustion of coal char,  
Proceedings of the Combustion Institute 34 (2) (2013) 2787-2793

Senneca O., Salatino P. ,Ricci D.,  
Development of a dry bottom ash extraction/afterburning system from pulverized fuel co-fired utility  
boilers  
Proceedings of the Combustion Institute 34 (2) (2013) 2855-2863



Senneca, O., Urciuolo, M., Chirone, R. ,  
A semidetailed model of primary fragmentation of coal ,  
Fuel 104 (2013) 253-261

Senneca O., Cortese L.,  
Thermal annealing of coal at high temperature and high pressure: effects on fragmentation and on rate of combustion, gasification and oxy-combustion,  
Fuel 116 (2014) 221-228

Allouis C., Esposito A., Salatino, P., Savino R., Senneca O.,  
Set up of an experimental protocol for the investigation of graphite combustion in Supersonic flow, .  
Experimental Thermal and Fluid Science 56 (2014) 9-15

G..Levi, O. Senneca, M. Causà, P. Salatino, P. Lacovig, S. Lizzit,  
Probing the chemical nature of surface oxides during coal char oxidation by high-resolution xps,  
Carbon 90 (2015) 181-196

O.Senneca, M.Urciuolo, P.Bareschino, G.Diglio, F.Pepe, R. Chirone,  
Pyrolysis, Combustion And Fragmentation Model Of Coal Particles: Preliminary Results,  
Combustion Science and Technology (2016) 188 (4-5), 759-768

S. Heuer,, O. Senneca,, A. Wutscher, H. Dudder, M. Schiemann, M. Muhler,V. Scherer,  
Effects of oxy-fuel conditions on the products of pyrolysis in a drop tube reactor,  
Fuel Processing Technology (2016) 150, pp. 41-49

Senneca, O., Apicella, B., Heuer, S., (...), Ciajolo, A., Russo, C.  
Effects of CO2 on submicronic carbon particulate (soot) formed during coal pyrolysis in a drop tube reactor  
Combustion and Flame (2016) 172, pp. 302-308

Apicella, B., Senneca, O., Russo, C., (...), Schiemann, M., Ciajolo, A.  
Separation and characterization of carbonaceous particulate (soot and char) produced from fast pyrolysis of coal in inert and CO2 atmospheres  
Fuel (2017) 201, 118-123

Levi G, Causà M, Lacovig P., Salatino P. and Senneca\*O.  
Mechanism and Thermochemistry of Coal Char Oxidation and Desorption of Surface Oxides  
Energy Fuels (2017) 31(3) 2308-2316

Senneca, O., Scala, F., Chirone, R., Salatino, P.  
Relevance of structure, fragmentation and reactivity of coal to combustion and oxy-combustion  
Fuel (2017) 201, 65-80

Pielsticker, S., Heuer, S., Senneca, O., (...), Scherer, V., Kneer, R.  
Comparison of pyrolysis test rigs for oxy-fuel conditions  
Fuel (2017) 156, 461–472

Erans, M., Cerciello, F., Coppola, A., (...), Manovic, V., Anthony, E.J.  
Fragmentation of biomass-templated CaO-based pellets  
Fuel (2017) 187, pp. 388-397

Osvalda Senneca  
Oxidation of carbon: what we know and what we still need to know  
(2017) Energy Procedia, 120, pp. 62-74.

Antonio Coppola , Osvalda Senneca, Piero Salatino,  
Application of the Carbon Looping (CarboLoop) Concept in a Novel Twin-Bed Reactor  
(2017) Energy Procedia, 120, pp. 447-453.

Osvalda Senneca, Massimo Urciuolo, Piero Bareschino, Riccardo Chirone, Prediction of structure evolution and fragmentation phenomena during combustion of coal. part a: effect of heating rate,  
Fuel Processing Technology 166 (2017) 228–236

Senneca, O.  
Oxidation of Carbon: What We Know and What We Still Need to Know  
(2017) Energy Procedia, 120, pp. 62-74.

Senneca, O., Bareschino, P., Urciuolo, M., Chirone, R.  
Prediction of structure evolution and fragmentation phenomena during combustion of coal: Effects of heating rate  
(2017) Fuel Processing Technology, 166, pp. 228-236  
O. Senneca, F. Cerciello, S Heuer, P. Ammendola  
Slow pyrolysis of walnut shells in nitrogen and carbon dioxide  
(2018) Fuel 225, 419-425

O Senneca, F Cerciello, L Cortese, S Heuer, M Schiemann, V Scherer  
Effects of CO2 enriched atmosphere on chars from walnut shells pyrolysis in a drop tube reactor  
(2018) Fuel 229, 235-240

F Montagnaro, C Tregambi, P Salatino, O Senneca, R Solimene  
Modelling oxy-pyrolysis of sewage sludge in a rotary kiln reactor  
(2018) Fuel 231, 468-478

Osvalda Senneca , Barbara Apicella , Carmela Russo, Francesca Cerciello, Piero Salatino, Sebastian Heuer, Annika Wütscher||, Martin Schiemann, Martin Muhler , and Viktor Scherer  
Pyrolysis and Thermal Annealing of Coal and Biomass in CO2-Rich Atmospheres  
Energy Fuels, 2018, 32 (10), pp 10701–10708  
DOI: 10.1021/acs.energyfuels.8b02417

Osvalda Senneca , Sebastian Heuer , Piero Bareschino , Massimo Urciuolo , Francesco Pepe , Martin Schiemann , Riccardo Chirone , Viktor Scherer  
Fragmentation of pulverized coal in a laminar drop tube reactor: Experiments and model  
Proceedings of the Combustion Institute 37(3), pp. 2849-2855 (2019)  
<https://doi.org/10.1016/j.proci.2018.08.057>

Barbara Apicella, Carmela Russo, Alessandra Di Blasi, Vito Mennella, Vincenzo Antonucci, Osvalda

Senneca, Francesca Cerciello, A. Cijolo

Nano-restructuring of carbon materials under high temperature heat treatment for environmental application and energy storage

CHEMICAL ENGINEERING TRANSACTIONS, VOL. 74, 2019, ISBN 978-88-95608-71-9; ISSN 2283-9216

Senneca, O.; Vorobiev, N.; Wuetscher, A.; Cerciello, F.; Heuer, S.; Wedler, C.; Span, R.; Schiemann, M.; Muhler, M.; Scherer, V.

Assessment of combustion rates of coal chars for oxy-combustion applications

Fuel (2019) 238 173, pp 185 2019

B. Apicella, C. Russo, A. Cijolo, L. Cortese, F. Cerciello, F. Stanzione, A. Wuetscher, M. Muhler, O. Senneca

High temperature pyrolysis of lignite and synthetic carbons

Fuel (2019) 241 pp. 264-272

Krusch, S., Scherer, V., Solimene, R., Senneca, O.

Assessment of coal pyrolysis kinetics for Barracuda or Ansys Fluent

Energy Procedia 158, pp. 1999-2004 (2019)

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#### **BOOK CHAPTERS**

O. Senneca

Characterization of biomass as non conventional fuels by thermal techniques (pp.299-325)

Progress in Biomass and Bioenergy production , Edited by S.Shahid Shaukat, InTech, 2011

ISBN 978-953-307-491-7

A. Cammarota , R. Chirone , P. Salatino, F. Scala, O. Senneca

Fluidized Bed Combustion of Tyre Derived Fuel

In "Recycling and Reuse of Used Tyres", pp.69-80

Edited by R.K. Dhir, M.C.Limbachiya, K.A.Paine

Thomas Telford Books, UK, 2001, ISBN: 0727729950

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#### **CONFERENCES (INTERNATIONAL)**

S. Masi, P.Salatino, O.Senneca

Gasification of a coal char by oxygen and carbon dioxide

CROCUS 94 (Combustion Related Organizations-Common and unified Symposium)- Joint meeting of the Italian and Portuguese Sections of the Combustion Institute, ILASS 2d workshop, AIVELA 2<sup>nd</sup> meeting, Salsomaggiore Terme 20-23 September 1994

O. Senneca, P.Salatino

The role of carbonization in the evolution of coal char reactivity

Preprints of the 211<sup>th</sup> ACS National Meeting, new Orleans, LA march 24-28 1996 vol. 41 N.1 p.103-106, American Chemical Society, division of fuel chemistry

O. Senneca, P.Salatino, S. Masi

Heat treatment of carbons: effects on gasification reactivity, organic and inorganic structure  
Preprints of the 23<sup>rd</sup> Biennial Conference on carbon 18-23 July 1997, Univeristy park, PA

S. Masi, P. Salatino, O. Senneca

Entrained flow gasification of coal: the relevance of thermal annealing

Proc. of The First European Congress on Chemical Engineering, Vol. 4, p. 2935, Firenze, May 4-7 (1997)

ISBN: 0390-2358

S. Masi, P. Salatino, O. Senneca

Combustion rates of chars from high-volatile fuels for FBC application

Proc. of 14<sup>th</sup> International Conference on Fluidized Bed Combustion, p. 135, ASME, N.Y. (1997)

ISBN: 0791815579

P. Salatino, O. Senneca,

Loss of gasification reactivity of coal chars upon thermal annealing,

Proc. of International Conference on Ash Behaviour Control in Energy Conversion Systems, Yokohama, Japan, p. 94, March 18-19, 1998.

T. Livneh, E. Bar-Ziv, O. Senneca, P. Salatino

Evolution of reactivity of highly porous chars from Raman microprobe spectrometry

Mediterranean Combustion Symposium, Antalya (Turkey),

Proc. of 1<sup>st</sup> Mediterranean Combustion Symposium, paper V.6 p.842, The Combustion Institute, Antalya, Turkey (1999)

P. Salatino, O. Senneca, S. Masi

Quantitative assessment of char thermodeactivation during coal combustion and gasification

In Prospects for coal science in the 21<sup>st</sup> century, Bao Li and Zhen Liu, Shanxi science and technology press, vol 1 p.483

10th International Conference on Coal Science,

Taiyuan (China) September 12-17 (1999).

ISBN 7-5377-1640-4

O. Senneca, P. Salatino, S. Masi,

Pathways and Kinetics of Coal Combustion,

Joint meeting of Scandinavian-Nordic and Italian Sections of the Combustion Institute, Ischia 18-21 September 2003, paper 1.8.1-1.8.4

ISBN: 8888104046

O. Senneca, P. Salatino, S. Masi,

Pathways and Kinetics of Coal Combustion,

Joint meeting of Scandinavian-Nordic and Italian Sections of the Combustion Institute, Ischia 18-21 September 2003, paper 1.8.1-1.8.4

O. Senneca, R. Chirone, P. Salatino and S. Masi

Oxidative pyrolysis of non fossil solid fuels

Proc. of 3<sup>rd</sup> Mediterranean Combustion Symposium, p. 156,

The Combustion Institute, Marrakech, Morocco (2003)

O. Senneca, P. Salatino and S. Masi

Heat Treatment-induced Loss of Combustion Reactivity of a Coal Char: the Effect of Exposure to Oxygen

Proc. of 3<sup>rd</sup> Mediterranean Combustion Symposium, p. 237

The Combustion Institute, Marrakech, Morocco (2003)

O. Senneca, P. Salatino, S. Masi

Assessment of a Comprehensive Mechanistic Framework of Coal Combustion,

European Combustion Meeting, Orléans 25-28 October 2003, paper 52

O. Senneca, P. Salatino, E. Kastanaki, D. Vamvuka

Thermogravimetric study of thermal and oxidative processes of a low rank coal

Joint Meeting of Greek and Italian sections of the Combustion Institute, paper 61

Corfù 17-19 June 2004

O. Senneca, P. Salatino, D. Menghini

The Influence of Surface Oxidation and Porosity on Thermal Annealing of Carbons

Joint Meeting of Greek and Italian sections of the Combustion Institute, paper 62

Corfù 17-19 Giugno 2004

O. Senneca, P. Salatino, R. Chirone, L. Nappi

An assessment of smoldering combustion in cigarette burning

European Combustion Meeting, Louvain La neuve Belgium, 3-6 April 2005, p. 234

Senneca O, Scherillo F., Ciaravolo S., Lionetti G., Nunziata A.

Thermal decomposition of pesticides in the presence of oxygen. part A: oxime carbamates

Technical challenges in the tobacco industry: symposium proceedings of the 60th Tobacco Science Research Conference, Montreal, Canada, September 2006, vol 32 series: Recent advances in tobacco science. ISSN: 0363-8480

Senneca O, Scamardella A, Ciaravolo S., Lionetti G., Nunziata A.

Thermal decomposition of pesticides in the presence of oxygen. part B: benzimidazolyc carbamates

Technical challenges in the tobacco industry: symposium proceedings of the 60th Tobacco Science Research Conference, Montreal, Canada, September 2006, vol 32 Series: Recent advances in tobacco science.

ISSN: 0363-8480

Senneca O, Scherillo F., Ciaravolo S., Lionetti G., Nunziata A.

Thermal decomposition of pesticides in the presence of oxygen. part C: pyrethroids

Technical challenges in the tobacco industry: symposium proceedings of the 60th Tobacco Science Research Conference, Montreal, Canada, September 2006, vol 32 della serie: recent advances in tobacco science.

ISSN: 0363-8480

Senneca O, Scherillo F., Lionetti G., Modestia F., Nunziata A.

Thermal decomposition of pesticides in the presence of oxygen. part D: pesticides containing one aromatic ring

Technical challenges in the tobacco industry: symposium proceedings of the 60th Tobacco Science Research Conference, Montreal, Canada, September 2006, vol 32 della serie: recent advances in tobacco science.

ISSN: 0363-8480

Senneca O., Salatino P., Menghini D.

The influence of thermal annealing on oxygen uptake and combustion rates of a bituminous coal char  
31st International Symposium on Combustion Heidelberg (Germany) August 2006

Senneca O, Chirone R. Salatino P., Ciaravolo S., Lionetti G., Nappi L.

Kinetics of pyrolysis of cigarette ingredients under inert and oxidative conditions  
17 th International Symposium on Analytical and Applied Pyrolysis Budapest, Hungary, May 21-26, 2006

Senneca O, Chirone R. Salatino P., Ciaravolo S., Nappi L., Nunziata A.

Composition of the gaseous products of pyrolysis of cigarette ingredients under inert and oxidative conditions  
17 th International Symposium on Analytical and Applied Pyrolysis Budapest, Hungary, May 21-26, 2006

P. Salatino, O. Senneca

Overlapping of purely thermally activated and heterogeneous processes in combustion and gasification of solid fuels

Proc. 3rd European Combustion Meeting, Plenary lecture Chania, Greece (2007)

O. Senneca, P. Salatino, R. Chirone

Co-firing of coal and meat and bone mill

Proc. 3rd European Combustion Meeting, Chania, Greece (2007)

O. Senneca

Chemical composition of fly ashes from a coal fired boiler

10th International Congress on Combustion By-Products and Their Health Effects. Ischia, Italy. June 17-20, 2007.

P. Salatino, O. Senneca, R. Solimene, R. Chirone

Smoldering combustion in cigarette smoking and generation of combustion by-products

10th International Congress on Combustion By-Products and Their Health Effects. Ischia, Italy. June 17-20, 2007.

*P. Salatino, O. Senneca*

A Novel Concept of Looping Combustion/Gasification of Carbon

Proc. 4th European Combustion Meeting, Wien, Austria (2009), ISBN: 978-3-902655-06-6

O. Senneca, R. Chirone

Fragmentation of Biomass Particles under Severe Heating Conditions

Proc. 4th European Combustion Meeting, Wien, Austria (2009) ISBN: 8888104102

P. Salatino, O. Senneca, L. Cortese

Carboloop: a novel concept of looping combustion of carbon

1st International Conference on Chemical Looping, Lyon Francia (2010)

O. Senneca, L. Cortese

Kinetics of coal combustion under oxyfuel conditions

5<sup>th</sup> International conference on Clean Coal Technology, Zaragoza, Spain (2011)

O. Senneca, S. Russo, M. Urciuolo, R. Chirone  
Fragmentation of solid fuels under severe heating conditions  
5<sup>th</sup> European Combustion Meeting, Cardiff, UK: (2011)

Ricci, P. Salatino, O.Senneca, R. Sorrenti  
Extraction and Postcombustion of Bottom Ash from Utility Boilers  
5<sup>th</sup> European Combustion Meeting, Cardiff, UK: (2011)

Coppola A., Senneca O., Solvimene R., Chitone R., Cortese L., Salatino P.  
Chemical looping combustion with oxygen uncoupling (CLOU) of a coal char in fluidized bed reactor  
International Conference on Coal Science and Technology, Oviedo, Spain, 2011

O. Senneca, P. Salatino, Rocco Sorrenti  
Beneficiation of coal fly ashes by oxygen chemisorption  
7<sup>th</sup> Mediterranean Combustion meeting, Sardinia, Italy, 2011

Antonio Coppola, Osvalda Senneca, Roberto Solimene, Riccardo Chirone, Luciano Cortese, Piero Salatino  
Chemical looping combustion with oxygen uncoupling (clou) of coal char in a fluidized bed reactor  
21<sup>st</sup> international conference on Fluidized Bed Combustion (21<sup>st</sup> FBC) , 3-6 June 2012, Naples Italy

Piero Salatino and Osvalda Senneca  
Assessment of Thermochemistry and Preliminary Design of a Carbon Looping Combustion Process (CarboLoop)  
2nd International Conference on Chemical Looping, Darmstadt Germany 26-28 Settembre 2012

R. Chirone, P. Salatino, F. Scala, O. Senneca, M. Urciuolo  
On-going activities on oxy-firing combustion in Naples  
64th International Energy Agency - Fluidized Bed Conversion Meeting  
Naples, June 3 2012

Teresa Tuccillo, Osvalda Senenca  
Lumped kinetic scheme for homogeneous reactions of volatiles and tar from biomass and wastes  
6<sup>th</sup> European Combustion Meeting, Lund, Sweden: (2013)

Letizia Romano, Piero Salatino, Osvalda Senneca\*  
Preliminary Design of a Carbon Looping Combustion Process (CarboLoop)  
6<sup>th</sup> European Combustion Meeting, Lund, Sweden: (2013)

C. Allouis, A. Esposito, P. Salatino, R. Savino, O. Senneca  
Set up of an experimental protocol for the investigation of graphite combustion in supersonic flow  
8<sup>th</sup> Mediterranean Combustion Symposium, Çeşme, Izmir, Turkey, September 8-13, 2013

Fulvio Bassetti, Daniele Coppola, Daniele Ricci, Osvalda Senneca  
Post-combustion of carbon residues from biomass / RDF co-firing during dry ash removal

2013 World of Coal Ash Conference, April 22-25, 2013.

Osvalda Senneca, Piero Salatino  
Heterogeneous phenomena in oxy/coal combustion  
TOTeM 39, Oxy-coal Combustion 2013

Osvalda SENNECA, Piero SALATINO, Mauro Causa', Luciano CORTESE, Gianluca LEVI  
Thermochemistry of oxidation of coals  
Joint meeting of Italian and French Sections of the Combustion Institute, Pisa 2014

Osvalda SENNECA, Mauro CAUSA, Gianluca LEVI, Luciano CORTESE, Piero SALATINO  
The mechanism of oxygen uptake on carbon as a key step in looping combustion  
3rd International Conference on Chemical Looping, Göteborg, Sweden September 9-11, 2014

Mauro Causà, Osvalda Senneca, Luciano Cortese, Gianluca Levi, Piero Salatino  
Structural study of low temperature Oxygen adsorption on Coal  
Joint meeting of Italian and French Sections of the Combustion Institute, Pisa 2014

Osvalda Senneca  
Oxidation of carbon: what we know and what we still need to know  
Key note Joint meeting of Italian and French Sections of the Combustion Institute, Pisa 2014

Teresa TUCCILLO, Osvalda SENNECA  
Lumped kinetics of reactions of volatiles and tar from plastic wastes  
Joint meeting of Italian and French Sections of the Combustion Institute, Pisa 2014

O. Senneca, P. Salatino  
Design of a carbon looping combustion process  
Joint meeting of Italian and French Sections of the Combustion Institute, Pisa 2014

Osvalda SENNECA, Mauro CAUSÀ, Gianluca LEVI, Luciano CORTESE, Piero SALATINO  
Thermochemistry of oxygen chemisorption-desorption on coal  
7th International Conference on Clean Coal Technologies (CCT) Krakow 17-21 May 2015

Osvalda Senneca, Massimo Urciuolo, Piero Bareschino, Riccardo Chirone  
Structural evolution and fragmentation phenomena of coal particles in combustion systems  
7th International Conference on Clean Coal Technologies (CCT) Krakow 17-21 May 2015

Osvalda Senneca, Massimo Urciuolo, Piero Bareschino, Giuseppe Diglio, Francesco Pepe, Riccardo Chirone  
Pyrolysis, combustion and fragmentation model of coal particles: preliminary results  
MCS-2015: Ninth Mediterranean Combustion Symposium Rhodes, Greece 7-11 June 2015  
Osvalda SENNECA, Mauro CAUSA, Gianluca LEVI, Luciano CORTESE, Piero SALATINO  
Effect of mild oxidation on the structure and properties of coals  
7th International Conference on Clean Coal Technologies (CCT) Krakow 17-21 May 2015

Antonio Esposito, Christophe Allouis, Osvalda Senneca



Combustion of a slender graphite rod in high enthalpy hypersonic air flow  
ASME-ATI-UIT 2015 Conference on Thermal Energy Systems: Production, Storage, Utilization and the Environment, 10-20/5/2015

J. González-Aguilar, J. M. Coronado, J. Nieto-Maestre, L. F. Cabeza, M. Lanchi, S. Sau, M. E. H. Navarro, Y. , C. Prieto, O. Senneca, C. Tregambi, M. Wokon

Round Robin Test on Enthalpies of Redox Materials for Thermochemical Heat Storage  
SolarPACES 2016 Abu Dhabi, UAE 11-14 ottobre 2016

Antonio Coppola, Osvalda Senneca, Piero Salatino

Assessment of the carbon looping (carboloop) concept in a novel twin fluidized bed reactor  
CFB13 Krakow 2017

O. Senneca , F. Cerciello, L. Cortese, S. Heuer, M. Schiemann and V. Scherer

Effects of oxy-fuel conditions on walnut shells pyrolysis in a drop tube reactor  
10<sup>th</sup> Mediterranean Combustion Symposium, Naples 17-21 September 2017

O. Senneca, F. Cerciello, S. Heuer, P. Ammendola

Slow pyrolysis of walnut shells in nitrogen and carbon dioxide  
10<sup>th</sup> Mediterranean Combustion Symposium, Naples 17-21 September 2017

Vorobiev N., Senneca O., Schiemann M.

Influence of devolatilization conditions on char reactivity  
The 42nd International Technical Conference On Clean Energy  
The Clearwater Clean Energy Conference, USA, June 11 - 15, 2017

O. Senneca, B. Apicella, C. Russo, F. Cerciello, L. Cortese, F. Stanzione, P. Salatino, A. Wütscher, M. Muhler, V. Scherer

Effects of CO<sub>2</sub> on pyrolysis of walnut shells at high temperature and heating rate in a HSR  
Joint Meeting of the German and Italian Sections of The Combustion Institute 41st Meeting of the Italian Section of The Combustion Institute Proceedings ISBN 978-88-88104-22-5

F. Cerciello, O. Senneca, A. Coppola, P. Salatino

Thermoanalytical and xps surface characterization of oxidized chars  
Joint Meeting of the German and Italian Sections of The Combustion Institute 41st Meeting of the Italian Section of The Combustion Institute Proceedings ISBN 978-88-88104-22-5

A. Coppola, O. Senneca, F. Cerciello, P. Salatino

An assessment of carbon oxidation mechanism by dynamic oxidation/desorption in a looping reactor  
Joint Meeting of the German and Italian Sections of The Combustion Institute 41st Meeting of the Italian Section of The Combustion Institute Proceedings ISBN 978-88-88104-22-5

C. Russo, O.Senneca, F. Cerciello, F. Stanzione, L. Cortese, A. Ciajolo, S. Heuer, V. Scherer, B. Apicella

Secondary tar reactions and soot formation in pyrolysis of coal  
Joint Meeting of the German and Italian Sections of The Combustion Institute 41st Meeting of the Italian Section of The Combustion Institute Proceedings ISBN 978-88-88104-22-5

S. Krusch, V. Scherer, R. Solimene, G. Ruoppolo, F. Cerciello, S. Pielsticker, R. Kneer, K. Schlögel, O.

Senneca Comparison of different diagnostic techniques for the assessment of coal pyrolysis rate  
Joint Meeting of the German and Italian Sections of The Combustion Institute 41st Meeting of the Italian Section of The Combustion Institute Proceedings ISBN 978-88-88104-22-5

Osvalda Senneca, Sebastian Heuer, Piero Bareschino, Massimo Urciuolo, Francesco Pepe, Martin Schiemann, Riccardo Chirone, Viktor Scherer

Fragmentation of pulverized coal in a laminar drop tube reactor: experiments and model  
International Combustion Symposium, Dublin 29/7-4/8 2018

O. Senneca, N. Vorobiev, A. Wütscher, F. Cerciello, S. Heuer, C. Wedler, R. Span, M. Schiemann, M. Muhler, V. Scherer

Assessment of combustion rates of coal chars for oxy-combustion applications  
2<sup>nd</sup> Oxyflame workshop, Bochum 2018

Barbara Apicella, Carmela Russo, Anna Ciajolo; Francesca Cerciello, Fernando Stanzione, Luciano Cortese; Annika Wuetscher, Martin Muhler; Osvalda Senneca  
High temperature pyrolysis of lignite and synthetic coals  
2nd Oxyflame Workshop, Bochum 2018

S. Krusch, V. Scherer, R. Solimene, O. Senneca

Assessment of coal pyrolysis kinetics for Barracuda or Ansys Fluent  
10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong, China

B. Lucio, A. Bayon, R. Olivares, M. E. Navarro, Y. Ding, O. Senneca, C. Tregambi, M. Lanchi, S. Sau, J. Vidal, J. González-Aguilar

Round Robin Test on Enthalpies of Redox Materials for Thermochemical Heat Storage: Perovskites, SolarPACES, October 2018, Casablanca

C. Russo, O. Senneca, F. Cerciello, F. Stanzione, L. Cortese, A. Ciajolo, S. Heuer, V. Scherer, B. Apicella

Insights on the role of secondary tar reactions in soot inception during fast pyrolysis of coal  
1<sup>st</sup> International conference on smart energy carriers, Naples, Italy 21-23 of January, 2019

O. Senneca, F. Cerciello, C. Russo, A. Wütscher, M. Muhler B. Apicella  
Thermal treatment on Lignin, Cellulose and Hemicellulose in nitrogen and carbon dioxide.  
MCS 11 Tenerife, Spain, 16-20 June 2019

O. Senneca, L. Cortese, R. Chirone, P. Salatino  
PYROLYSIS AND COMBUSTION OF SOLID REFINERY RESIDUES  
MCS 11 Tenerife, Spain, 16-20 June 2019

P. Bareschino, M. Urciuolo, V. Scherer, R. Chirone, O. Senneca  
Effect of CO<sub>2</sub> on coal fragmentation  
9<sup>th</sup> International Symposium on Coal Combustion, Qingdao (China) July 21-24 (2019)

M. Urciuolo, R. Solimene, S. Krusch, V. Scherer, P. Salatino, R. Chirone, O. Senneca  
On the plastic behavior of carbonaceous fuels in Fluidized Beds  
9<sup>th</sup> International Symposium on Coal Combustion, Qingdao (China) July 21-24 (2019)

A. Coppola, O. Senneca, F. Scala, F. Montagnaro, P. Salatino

Looping Cycles for Low Carbon Technologies

9<sup>th</sup> International Symposium on Coal Combustion, Qingdao (China) July 21-24 (2019)

Stefan Pielsticker, Osvalda Senneca, Thobias Kreitzberg, Francesca Cerciello, Oliver Hatzfeld, Reinhold Kneer

Comparability and validity range of pyrolysis kinetics from Chinese coals obtained with different experimental setups

9<sup>th</sup> International Symposium on Coal Combustion, Qingdao (China) July 21-24 (2019)

O. Senneca, C. Russo, M. Muhler, F. Cerciello, B. Apicella

Fast Pyrolysis in CO<sub>2</sub>-rich Atmospheres of biomass components: Lignin, Hemicellulose and Cellulose

14 th SDEWES, Dubrovnik 1-6 October 2019

O. Senneca, B. Apicella, C. Russo, F. Cerciello

Biomass behaviour upon Fast Pyrolysis in CO<sub>2</sub>-rich Atmospheres: role of Lignin, Hemicellulose and Cellulose

14 th SDEWES, Dubrovnik 1-6 October 2019

#### CONFERENCES (NATIONAL)

Senneca, P. Salatino

Some issues in the gasification of coal chars

Atti del Congresso GRICU 1998 "Formazione e Ricerca", Ferrara, p.95, 23-25 Settembre 1998.

S. Masi, P. Salatino, O. Senneca

Gasification of a coal char by oxygen and carbon dioxide.

Joint Meeting of the Italian and Portuguese sections of the Combustion Institute, Salsomaggiore (1994).

S. Masi, P. Russo, P. Salatino, O. Senneca

The relevance of thermal treatment to the gasification reactivity of coal chars

Combustion Meeting, Napoli, p. VII-9 (1995)

O. Senneca, P. Salatino, E. Landi

Entrained flow gasification modelling

FRANTIC '97, Combustion Meeting, Chia Laguna (CA), p. VI-8 (1997)

S. Masi, O. Senneca, P. Salatino

Carbon gasification: patterns of thermodeactivation

Combustion Meeting 1998 "Giornate di Studio in Memoria di Leopoldo Massimilla", XXI Event of the Italian Section of the Combustion Institute, Ravello (SA) p. 99 (1998)

O. Senneca, P. Salatino, E. Landi

Some issues in entrained flow gasification of coal

Combustion Meeting 1998 "Giornate di Studio in Memoria di Leopoldo Massimilla", XXI Event of the Italian Section of the Combustion Institute, Ravello (SA) p. 87 (1998)

P. Salatino, O. Senneca, S. Masi  
Thermodeactivation during coal gasification  
Combustion Meeting 1999, Firenze (1999)

A. Cammarota, R. Chirone, A. Cioffi, A. Marzocchella, P. Salatino, O. Senneca  
The Relation Between Primary Ash particle Size Distribution and Mineral Inclusions in Fluidized Bed Combustion of Coal  
Combustion Meeting 2001, Santa Margherita Ligure, paper II.11 ISSN: 8888104046

O. Senneca, S. Masi, R. Chirone, P. Salatino,  
Oxidative versus Inert Pyrolysis of Solid Fuels  
Combustion Meeting 2001, Santa Margherita Ligure, paper III.11 ISSN: 8888104046

Cammarota, A. Cante, R. Chirone, C. Liccardi, S. Masi, F. Miccio, S. Russo, F. Scala, O. Senneca, A. Silvestre, C. Zucchini  
Termovalorizzazione di biomasse e di residui di origine civile ed industriale in letto fluidizzato.  
"Ricicla 2002" Fiera Internazionale del recupero di materia ed energia e delle sostenibilità ambientali, Rimini, (2002)

O. Senneca, P. Salatino  
Loss of Gasification Reactivity Towards O<sub>2</sub> and CO<sub>2</sub> Upon Heat Treatment of Carbons  
Combustion Meeting 2002, Roma, paper IV.13 ISSN: 888810402X

O. Senneca, R. Chirone, P. Salatino, L. Nappi  
An assessment of cigarette burning  
28<sup>th</sup> Combustion Meeting 2005, Napoli, paper I-7 ISSN: 8888104054

O. Senneca, P. Salatino, D. Menghini  
The Influence of Thermal Annealing on Oxygen Uptake and Combustion Rates of a Bituminous Coal Char  
29<sup>th</sup> Combustion Meeting 2006, Pisa, paper IX-9 ISSN: 8888104062

O. Senneca, V. Romano, P. Salatino  
Design of a Single Particle Reactor for Kinetic Studies of Biomass Combustion  
30<sup>th</sup> Combustion Meeting 2007, Ischia, paper VI.4 ISSN: 8888104072

R. Sorrenti, D. Ricci, P. Salatino, R. Solimene, R. Chirone, O. Senneca  
Increasing the robustness of the ash management system in utility boilers  
32<sup>nd</sup> Combustion Meeting 2009, Naples ISSN: 8888104102

P. Salatino, O. Senneca  
A Novel Concept of Looping Combustion of Carbon  
32<sup>nd</sup> Combustion Meeting 2009, Naples ISSN: 8888104102

F. Montagnaro, P. Salatino, O. Senneca

The Relevance of Slag Formation and Wall Burning to Entrained-Flow Combustion and Gasification of Coal

32nd Combustion Meeting 2009, Naples ISSN: 8888104102

O. Senneca, P. Salatino, R. Chirone, L. Cortese, R. Solimene

Mechanochemical Activation of High-Carbon Fly Ash for Enhanced Carbon Reburning

33rd Combustion Meeting 2010, Ischia

O. Senneca, S. Russo, M. Urciuolo, R. Chirone

Fragmentation Of Solid Fuels Under Severe Heating Conditions

33rd Combustion Meeting 2010, Ischia

O. Senneca, P.Salatino

A Semi-Detailed Kinetic Model of Char Combustion with Consideration of Thermal Annealing

33rd Combustion Meeting 2010, Ischia

T. Maffei, O. Senneca, E. Ranzi, P.Salatino

Set up of a comprehensive model of pyrolysis, annealing and char combustion suitable for application in CFD codes of pulverised coal combustion and oxy-combustion

34th Combustion Meeting 2011, Roma

O. Senneca, L.Cortese

Assessment of the kinetics of coal combustion under oxy-fuel conditions by means of different experimental techniques

34th Combustion Meeting 2011, Roma

A.Esposito, O. Senneca, C. Allouis, F.P. Bonetti, V. Caso

Graphite combustion in high enthalpy supersonic flow"

XXII AIDAA Congress, Naples, September 2013

C. Russo, B. Apicella, A. Ciajolo, L. Cortese, S.Heuer, F. Stanzione, O. Senneca

Separation and characterization of size-segregated fractions (soot and char) of carbonaceous particulate produced from coal pyrolysis

XXXIX meeting of the Italian section of the combustion institute, Naples 2016 SSBN:978888104171

María Erans, Massimo Urciuolo, Liberato Gargiulo, Fabrizio Scala, Vasilije Manovic,

Osvalda Senneca,Edward J. Anthony

Primary fragmentation of Biomass-Cement-CaO pellets for Calcium Looping

XXXIX meeting of the Italian section of the combustion institute, Naples 2016 ISSN:978888104171

A. Wütscher, B. Apicella, V. Scherer, C. Russo, F. Stanzione, A. Ciajolo, S. Heuer, O.Senneca

Characterization of tar produced from walnut shells pyrolysis

40<sup>th</sup> Meeting of the Italian section of the combustion institute, Rome 2017

Urciuolo M., Bareschino P., Diglio G., Pepe F., Senneca O.

Numerical evaluation of particle structure evolution and fragmentation during coal combustion at different heating rate

40<sup>th</sup> Meeting of the Italian section of the combustion institute, Rome 7-9 June 2017

F. Cerciello, B. Apicella, C. Russo, O. Senneca

Effects of pressure on lignocellulosic biomass fast pyrolysis

42<sup>nd</sup> Meeting of the Italian section of the combustion institute, Ravenna Sepyember 2019