

CURRICULUM VITAE



Osvalda Senneca

Place and date of birth: Napoli, 15.12.69

Citizenship: Italian

Family: married, three children (age 21, 17, 110)

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WORK EXPERIENCE

- Since 2007 Senior researcher at Italian National Council of Research (CNR), Institute of Research on Combustion (IRC), Napoli
- 2001-2007 Tenure researcher at Italian National Council of Research (CNR), Institute of Research on Combustion (IRC), Napoli
- 2000-2001 Research fellow at Università degli Studi di Napoli Federico II, Department of Chemical Engineering, Chair of Chemical plants
- 1998-1999 Collaboration under contract with Università di Napoli Federico II, Department of Chemical Engineering:
- 1995-1998 PhD Università di Napoli Federico II, Department of Chemical Engineering
- 1994-1995 Engineer at F.I.S.I.A. S.p.A. (FIAT IMPRESIT SISTEMI AMBIENTALI) Division of Process Development.
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EDUCATION

- 1998 **PhD in Chemical Engineering**
Department of Chemical Engineering, University of Naples Federico II, Piazzale Tecchio 80, Naples
Thesis: effects of exposure to elevated temperatures on the reactivity of coal in gasification processes.
Supervisor: Prof. Piero Salatino;
Scientific Committee: Prof. A. Sarofim, M.I.T. (U.S.A) and Prof. A. D'Alessio, Università Federico II
- 27/01/1994 **MsC degree in Chemical Engineering**
Mark: 110/110 cum laude
Thesis: Coal gasification, kinetics and reactor design
Supervisor: Prof. Piero Salatino
- 1994 **Admitted to the profession of engineer**
Rating: 118/120 Ordine degli Ingegneri di Napoli, 1° session 1994
- 1988 **Maturità classica**
Liceo Umberto I, Napoli
Mark: 60/60
- 1987 **Intercultura** scholarship to attend St Peter's High School, Ontario, Canada
- 1986 **Certificate of Proficiency in English**, Cambridge University
- 2018 Course in eU projects management of Università degli Studi Tor Vergata (:"eU-maps: il modello integrato di Europogettazione e project management, per progettare, gestire e rendicontare i fondi europei", 10CFU)

- 2018 Certification ISIPM-Base, Istituto Italiano di Project Management
- 2019 La gestione responsabile dei conflitti in ambito ispettivo (John Cabot University)

MAJOR ACHIEVEMENTS AND APPOINTMENTS

- 2020 Included in the top 2% scientist according to Stanford Career Rankings 2019 (<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000918>)
- 2019 “Gastprofessor” RUB University (DE) (Cerimony 2019-2024)
- 2018 Referent for 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 CO₂ 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 Acadaemy 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 9th ISCC, international symposium on coal combustion, China China, July 21-24, 2019
- Scientific committee of the 12th 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 CO₂- 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 Buijan).
- 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

- AMPEA workshop on CCS 10-11 March 2021 (online): “From Clean Combustion to CCU: intriguing topics for process engineering and materials scientists”
- 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 sinergies 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.
- 1st 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

Editorial activity

- Editor di Journal of Analytical and Applied Pyrolysis (Q1, Elsevier) (2021)
-
- Editorial board of “Journal Applications in Energy and Combustion Science”, Elsevier (2019)
- 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 38th International Symposium on Combustion, *Colloquium :SOLID FUELS*
- Co-Chair 37th 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 9th ISCC, international symposium on coal combustion, China China, July 21-24, 2019
- Organizer of 1st 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*
- Guest Editor of Special Issue "Advances in Solid Fuels Conversion to Enable the Global Energy Transitions" in Energies 2021
- 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.

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 O₂ and CO₂ 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 ,
he 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

Osvolda Senneca

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

Antonio Coppola , Osvolda 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. Ciajolo
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. Ciajolo, 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)

Lucio, B., Bayon, A., Olivares, R., (...), Vidal, J., González-Aguilar, J.
Round robin test on enthalpies of redox materials for thermochemical heat storage: Perovskites
2019 AIP Conference Proceedings 2126, 210001

Holland, T., Fletcher, T.H., Senneca, O.
Review of Carbonaceous Annealing Effects on O₂ and CO₂ Coal Reactivity
Energy & Fuels 2019, 33, 11, 10415-10434

Cerciello, F., Senneca, O., Russo, C., Apicella, B.
Comparison of Primary Volatiles from Coal and Biomass Pyrolysis in N₂ and CO₂
Energy & Fuels 2019, 33, 12, 12822-12829

P.Bareschinoa, M.Urciuolo, V.Scherer, R.Chirone, O.Senneca
Effect of O₂/CO₂ atmospheres on coal fragmentation
FUEL 2020 267, 117145, <https://doi.org/10.1016/j.fuel.2020.117145>

O.Senneca, C.Ontyd, F.Cerciello, M.Schiemann, and V.Scherer
Extension of the Thermal Annealing Concepts Developed for Coal Combustion to Conversion of
Lignocellulosic Biomass
Energy Fuels 2020, 34, 3, 3661–3670, DOI: 10.1021/acs.energyfuels.9b03172

Cerciello, F., Senneca, O., Russo, C., Apicella, B.
Comparison of Primary Volatiles from Coal and Biomass Pyrolysis in N₂ and CO₂
Energy and Fuels 2019 33(12), pp. 12822-12829

Urciuolo, M., Solimene, R., Ammendola, P., (...), Chirone, R., Senneca, O.
On the agglomeration tendency of carbonaceous fuels in fluidized beds
Fuel 2020 277, 118187

Apicella, B., Russo, C., Cerciello, F., (...), Scherer, V., Senneca, O.
Insights on the role of primary and secondary tar reactions in soot inception during fast pyrolysis of
coal
Fuel 2020 275, 117957

Senneca, O., Cortese, L., Di Martino, R., (...), Race, M., Scopino, A. Mechanisms affecting the
delayed efficiency of cement based stabilization/solidification processes
Journal of Cleaner Production 2020 261, 121230

Thermal treatment of lignin, cellulose and hemicellulose in nitrogen and carbon dioxide
Senneca, O., Cerciello, F., Russo, C., (...), Muhler, M., Apicella, B.
Fuel 2020 271, 117656

Coppola, A., Senneca, O., Scala, F., Montagnaro, F., Salatino, P. Looping cycles for low carbon
technologies: A survey of recent research activities in Naples
Fuel 2020 268, 117371

Senneca, O., Chirone, R., Cortese, L., Salatino, P.
Pyrolysis and combustion of a solid refinery waste
Fuel 2020 267, 117258

Osvolda Senneca, Teresa Tuccillo

Lumped Kinetics for Homogeneous Reactions of n-Hexadecane and n-Decene as Model Compounds for PE Pyrolysis Primary Tars
Energies 2020, 13(20), 5466; <https://doi.org/10.3390/en13205466>: 10.3390/en13205466

Gianluca Levi, Mauro Causà, Luciano Cortese, Piero Salatino, Osvalda Senneca
On how mild oxidation affects the structure of carbons: Comparative analysis by different techniques
Applications in Energy and Combustion Science, 2020- 1–4, 100006, DOI:
10.1016/j.jaecs.2020.100006

Francesca Cerciello, Antonio Coppola, Paolo Lacovig, Osvalda Senneca, Piero Salatino
Characterization of surface-oxides on char under periodically changing oxidation/desorption conditions
Renewable & Sustainable Energy Reviews, 2021, 137, 110453 , <https://doi.org/10.1016/j.rser.2020.110453>

F.Cerciello, B.Apicella, C.Russo, L.Cortese, O.Senneca
Effects of pressure on lignocellulosic biomass fast pyrolysis in nitrogen and carbon dioxide
Fuel, 2021, 287, 11960 <https://doi.org/10.1016/j.fuel.2020.119604>

Cerciello, F., Senneca, O., Coppola, A., ...Lacovig, P., Salatino, P.,
The influence of temperature on the nature and stability of surface-oxides formed by oxidation of char
Renewable and Sustainable Energy Reviews, 2021, 137, 110595

BOOK CHAPTERS

O. Senneca
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