PERSONAL INFORMATION

Alfredo ALOISE

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Sex M | Date of birth 15/07/1976 | Nationality Italian

ACTUAL POSITION Associate Professor of Industrial Chemistry (CHIM / 04) at the University of Aquila

DEGREE Doctorate in Chemical and Materials Engineering (obtained in 2008 at the University of Calabria)

SHORT SUMMARY

Alfredo ALOISE obtained his PhD in Chemical and Materials Engineering in February 2008 working, in the group of Prof. Girolamo Giordano at the Industrial Chemistry Laboratory.
Since June 2004 it have been part of the Industrial Chemistry Group of the University of Calabria directed by Prof. G. Giordano.
"Post doc" researcher at the University of Calabria since November 2009, it is currently an associate professor of Industrial Chemistry.
His research interests concern applied heterogeneous catalysis, with particular attention to environmental protection and sustainable energy and production. His has experience in the field of synthesis and characterization of zeolitic catalysts in the area of green chemistry processes
It has worked as
Researcher at the Laboratory for the Development of Industrial
Catalytic Processes of the Faculty of Industrial Chemistry, University of
Bologna, on the Catalytic Oxidation Reaction of Benzene Phenol by

- heterogeneous catalysis.

Researcher at the RMN Laboratory of the
Department of Chemistry of the University "Notre Dame de la Paix,
Namur - Belgium, on the Characterization of Zeolitic Catalysts and

- Synthesis of Carbon Nanotubes.

Scientific Responsability
for the DIATIC - TECHFEM collaboration at the Department of
Environmental and Chemical Engineering relating to the "procedures for
extracting polyphenolic fractions from olive processing waste".
His research activity is documented by 43 scientific publications in international peer reviewed journals, from the presentation of 14 communications as co-author at national and international conferences, of which 3 oral communications and 11 posters as presenting author.
The candidate participated in the organization, reception and technical assistance activities at various national and international workshops and congresses. It is a member of the Local Organizing Committee of the VII Convegno Nazionale di Scienza e Tecnologia delle Zeoliti joint with the 1st Czech-Italian Workshop on Catalysis and Zeolites – Camigliatello Silano (CS), 16th International Zeolite Conference joint with 7th International Mesostructured Materials Symposium, July 4-9, Sorrento, Italy, 6th Czech – Italian- Spanish Conference on Molecular Sieves and Catalysis, Amantea, 14-17 June, ITALY

EDUCATION AND CAREER

2003	Degree in Chemical and materials Engineering at the University of Calabria (prof. G Giordano)
2004-2007	PhD in Chemical and materials Engineering at the University of Calabria (prof. G.Giordano)
2007-2009	Post-doctoral fellowship, Univ. of Calabria, Italy
2009-2010	Post-doctoral fellowship, Univ. of Calabria, Italy

2010-2021 Officer, Univ. of Calabria, Italy

2021-today Associate Prof. (Industrial Chemistry), Univ. Aquila

RESEARCH AND QUALIFICATION

PUBLICATIONS

It is the author of 43 publications according to the official IRIS University database.

QUALIFICATION

The values of the indicators relating to scientific production in Area 03 / C2, SSD CHIM / 04 - Industrial Chemistry are higher than the level II threshold values both in the last 5 and 10 years.

IDENTIFICATION (author code)

ORCID ID: https://orcid.org/0000-0002-3131-8674
Scopus Author ID: 16066569000

BIBLIOMETRIC DATA

Scopus Author h-index: 21 (2008-2022) Total citations 1288 (by 915 documents)
https://www.scopus.com/authid/detail.uri?authorId=16066569000 . Accessed 21 Feb. 2022

From Google Scholar (21 febbraio 2022)

- https://scholar.google.com/citations?hl=it&user=_gZruOIAAAAJ&view_op=list_works&authuser=1&gmla=AJsNF4OxQoET5dlUb5nmTAZNy2XhKv407_oc6iluZm6NPcpNVtXkVtE1frWUPMkXNho5FQ7rh80Wnrk0Lx8WeIP6QpzKOkiZQ
- *Citations:* 1552 (1201 from 2017)
- ***h-index:*** **23** (21 from 2017)
- *i10-index:* 32 (32 from 2017)

PUBLICATIONS LAST 10 YEARS

Catizzone, E., Aloise, A., Giglio, E., Ferrarelli, G., Bianco, M., Migliori, M., Giordano, G.
MFI vs. FER zeolite during methanol dehydration to dimethyl ether: The crystal size plays a key role
(2021) Catalysis Communications, 149, art. no. 106214, . Cited 5 times.

Marino, A., Aloise, A., Hernando, H., Fermoso, J., Cozza, D., Giglio, E., Migliori, M., Pizarro, P., Giordano, G., Serrano, D.P.
ZSM-5 zeolites performance assessment in catalytic pyrolysis of PVC-containing real WEEE plastic wastes
(2021) Catalysis Today, .

Dalena, F., Giglio, E., Giorgianni, G., Cozza, D., Marino, A., Aloise, A.
DME production via methanol dehydration with H form and desilicated ZSM-5 type zeolitic catalysts: Study on the correlation between acid sites and conversion
(2021) Chemical Engineering Transactions, 84, pp. 211-216.

Aloise, A., Marino, A., Dalena, F., Giorgianni, G., Migliori, M., Frusteri, L., Cannilla, C., Bonura, G., Frusteri, F., Giordano, G.
Desilicated ZSM-5 zeolite: Catalytic performances assessment in methanol to DME dehydration
(2020) Microporous and Mesoporous Materials, 302, art. no. 110198, . Cited 13 times.

Stelitano, S., Conte, G., Policicchio, A., Aloise, A., Desiderio, G., Agostino, R.G.
Pinecone-derived activated carbons as an effective medium for hydrogen storage
(2020) Energies, 13 (9), art. no. 2237, . Cited 5 times.

Catizzone, E., Daele, S.V., Bianco, M., Di Michele, A., Aloise, A., Migliori, M., Valtchev, V., Giordano, G.
Catalytic application of ferrierite nanocrystals in vapour-phase dehydration of methanol to dimethyl ether
(2019) Applied Catalysis B: Environmental, 243, pp. 273-282. Cited 43 times.

Catizzone, E., Migliori, M., Aloise, A., Lamberti, R., Giordano, G.
Hierarchical low si/al ratio ferrierite zeolite by sequential postsynthesis treatment: Catalytic assessment in dehydration reaction of methanol
(2019) Journal of Chemistry, 2019, art. no. 3084356, . Cited 16 times.

Migliori, M., Catizzone, E., Aloise, A., Bonura, G., Gómez-Hortigüela, L., Frusteri, L., Cannilla, C., Frusteri, F., Giordano, G.
New insights about coke deposition in methanol-to-DME reaction over MOR-, MFI- and FER-type zeolites
(2018) Journal of Industrial and Engineering Chemistry, 68, pp. 196-208. Cited 30 times.

Stelitano, S., Conte, G., Policicchio, A., Aloise, A., Desiderio, G., Agostino, R.G.
Low Pressure Methane Storage in Pinecone-Derived Activated Carbons
(2018) Energy and Fuels, 32 (10), pp. 10891-10897. Cited 7 times.

Alessandro, F., Scarcello, A., Basantes Valverde, M.D., Coello Fiallos, D.C., Osman, S.M., Cupolillo, A., Arias, M., Arias De Fuentes, O., De Luca, G., Aloise, A., Curcio, E., Nicotra, G., Spinella, C., Caputi, L.S.
Selective synthesis of turbostratic polyhedral carbon nano-onions by arc discharge in water
(2018) Nanotechnology, 29 (32), art. no. 325601, . Cited 7 times.

Cazzanelli, E., De Luca, O., Vuono, D., Policicchio, A., Castriota, M., Desiderio, G., De Santo, M.P., Aloise, A., Fasanella, A., Rugiero, T., Agostino, R.G.
Characterization of graphene grown on copper foil by chemical vapor deposition (CVD) at ambient pressure conditions
(2018) Journal of Raman Spectroscopy, 49 (6), pp. 1006-1014. Cited 13 times.

Catizzone, E., Cirelli, Z., Aloise, A., Lanzafame, P., Migliori, M., Giordano, G.
Methanol conversion over ZSM-12, ZSM-22 and EU-1 zeolites: from DME to hydrocarbons production
(2018) Catalysis Today, 304, pp. 39-50. Cited 25 times.

Molino, A., Donatelli, A., Marino, T., Aloise, A., Rimauro, J., Iovane, P.
Waste tire recycling process for production of steam activated carbon in a pilot plant
(2018) Resources, Conservation and Recycling, 129, pp. 102-111. Cited 26 times.

Lanzafame, P., Papanikolaou, G., Perathoner, S., Centi, G., Migliori, M., Catizzone, E., Aloise, A., Giordano, G.
Direct versus acetalization routes in the reaction network of catalytic HMF etherification
(2018) Catalysis Science and Technology, 8 (5), pp. 1304-1313. Cited 18 times.

Aloise, A., Catizzone, E., Migliori, M., B.Nagy, J., Giordano, G.
Catalytic behavior in propane aromatization using GA-MFI catalyst
(2017) Chinese Journal of Chemical Engineering, 25 (12), pp. 1863-1870. Cited 7 times.

Migliori, M., Aloise, A., Catizzone, E., Caravella, A., Giordano, G.
Simplified Kinetic Modeling of Propane Aromatization over Ga-ZSM-5 Zeolites: Comparison with Experimental Data
(2017) Industrial and Engineering Chemistry Research, 56 (37), pp. 10309-10317. Cited 8 times.

Catizzone, E., Aloise, A., Migliori, M., Giordano, G.
The effect of FER zeolite acid sites in methanol-to-dimethyl-ether catalytic dehydration
(2017) Journal of Energy Chemistry, 26 (3), pp. 406-415. Cited 27 times.

Vuono, D., Catizzone, E., Aloise, A., Policicchio, A., Agostino, R.G., Migliori, M., Giordano, G.
Modelling of adsorption of textile dyes over multi-walled carbon nanotubes: Equilibrium and kinetic
(2017) Chinese Journal of Chemical Engineering, 25 (4), pp. 523-532. Cited 29 times.

Frusteri, F., Migliori, M., Cannilla, C., Frusteri, L., Catizzone, E., Aloise, A., Giordano, G., Bonura, G.
Direct CO2-to-DME hydrogenation reaction: New evidences of a superior behaviour of FER-based hybrid systems to obtain high DME yield
(2017) Journal of CO2 Utilization, 18, pp. 353-361. Cited 65 times.

Vuono, D., Catizzone, E., Aloise, A., Policicchio, A., Agostino, R.G., Migliori, M., Giordano, G.
Study of adsorption behavior of multi-walled carbon nanotubes towards dyes applied in textile applications
(2017) Advanced Science Letters, 23 (6), pp. 5851-5854. Cited 2 times.

Migliori, M., Catizzone, E., Aloise, A., Braccio, G., Giordano, G.
Synthesis and catalytic performances evaluation of FER-based catalysts with different acidity in methanol conversion to DME
(2017) Advanced Science Letters, 23 (6), pp. 5847-5850. Cited 1 time.

Catizzone, E., Aloise, A., Migliori, M., Giordano, G.
From 1-D to 3-D zeolite structures: performance assessment in catalysis of vapour-phase methanol dehydration to DME
(2017) Microporous and Mesoporous Materials, 243, pp. 102-111. Cited 39 times.

Bonura, G., Frusteri, F., Cannilla, C., Drago Ferrante, G., Aloise, A., Catizzone, E., Migliori, M., Giordano, G.
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(2016) Catalysis Today, 277, pp. 48-54. Cited 51 times.

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(2016) Journal of Porous Materials, 23 (2), pp. 389-400. Cited 20 times.

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(2016) New Journal of Chemistry, 40 (5), pp. 4300-4306. Cited 12 times.

Minuto, F.D., Policicchio, A., Aloise, A., Agostino, R.G.
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(2015) International Journal of Hydrogen Energy, 40 (42), pp. 14562-14572. Cited 20 times.

Lanzafame, P., Barbera, K., Perathoner, S., Centi, G., Aloise, A., Migliori, M., MacArio, A., Nagy, J.B., Giordano, G.
The role of acid sites induced by defects in the etherification of HMF on Silicalite-1 catalysts
(2015) Journal of Catalysis, 330, pp. 558-568. Cited 54 times.

Frusteri, F., Bonura, G., Cannilla, C., Drago Ferrante, G., Aloise, A., Catizzone, E., Migliori, M., Giordano, G.
Stepwise tuning of metal-oxide and acid sites of CuZnZr-MFI hybrid catalysts for the direct DME synthesis by CO2 hydrogenation
(2015) Applied Catalysis B: Environmental, 176-177, pp. 522-531. Cited 88 times.

Catizzone, E., Aloise, A., Migliori, M., Giordano, G.
Dimethyl ether synthesis via methanol dehydration: Effect of zeolite structure
(2015) Applied Catalysis A: General, 502, pp. 215-220. Cited 57 times.

Migliori, M., Aloise, A., Catizzone, E., Giordano, G.
Kinetic analysis of methanol to dimethyl ether reaction over H-MFI catalyst
(2014) Industrial and Engineering Chemistry Research, 53 (38), pp. 14885-14891. Cited 34 times.

Migliori, M., Aloise, A., Giordano, G.
Methanol to dimethylether on H-MFI catalyst: The influence of the Si/Al ratio on kinetic parameters
(2014) Catalysis Today, 227, pp. 138-143. Cited 30 times.

Candamano, S., Frontera, P., Macario, A., Aloise, A., Crea, F.
New material as Ni-support for hydrogen production by ethanol conversion
(2014) WIT Transactions on Engineering Sciences, 87, pp. 115-122. Cited 4 times.

Frontera, P., Macario, A., Aloise, A., Antonucci, P.L., Giordano, G., Nagy, J.B.
Effect of support surface on methane dry-reforming catalyst preparation
(2013) Catalysis Today, 218-219, pp. 18-29. Cited 70 times.

Policicchio, A., MacCallini, E., Agostino, R.G., Ciuchi, F., Aloise, A., Giordano, G.
Higher methane storage at low pressure and room temperature in new easily scalable large-scale production activated carbon for static and vehicular applications
(2013) Fuel, 104, pp. 813-821. Cited 76 times.

Janiszewska, E., Macario, A., Wilk, J., Aloise, A., Kowalak, S., Nagy, J.B., Giordano, G.
The role of the defect groups on the silicalite-1 zeolite catalytic behavior
(2013) Microporous and Mesoporous Materials, 182, pp. 220-228. Cited 18 times.

Frontera, P., MacArio, A., Aloise, A., Crea, F., Antonucci, P.L., Nagy, J.B., Frusteri, F., Giordano, G.
Catalytic dry-reforming on Ni-zeolite supported catalyst
(2012) Catalysis Today, 179 (1), pp. 52-60. Cited 43 times.

Lanzafame, P., Temi, D.M., Perathoner, S., Centi, G., MacArio, A., Aloise, A., Giordano, G.
Etherification of 5-hydroxymethyl-2-furfural (HMF) with ethanol to biodiesel components using mesoporous solid acidic catalysts
(2011) Catalysis Today, 175 (1), pp. 435-441. Cited 141 times.

Frontera, P., Aloise, A., MacArio, A., Crea, F., Antonucci, P.L., Giordano, G., Nagy, J.B.
Zeolite-supported Ni catalyst for methane reforming with carbon dioxide
(2011) Research on Chemical Intermediates, 37 (2-5), pp. 267-279. Cited 21 times.

Barbera, D., Cavani, F., D'Alessandro, T., Fornasari, G., Guidetti, S., Aloise, A., Giordano, G., Piumetti, M., Bonelli, B., Zanzottera, C.
The control of selectivity in benzene hydroxylation catalyzed by TS-1: The solvent effect and the role of crystallite size
(2010) Journal of Catalysis, 275 (1), pp. 158-169. Cited 53 times.

TEACHING AND DIDACTIC EXPERIENCE

IN ITALY *October -December 2007*	UNIVERSITY TRAINER OF THE "CHEMICAL ENGINEERING LABORATORY I " COURSE, THREE-YAER DEGREE IN CHEMICAL ENGINEERING, UNIVERSITY OF CALABRIA
1 October -22 December 2008	UNIVERSITY TRAINER OF THE "TECHNIQUES OF ABATEMETN OF GASEOUS POLLUTANTS EFFLUENTS", MASTER DEGREE IN ENVIROMENTAL ENGINEERING, UNIVERSITY OF CALABRIA
1 October -22 December 2008	UNIVERSITY TRAINER OF THE "INDUSTRIAL CHEMISTRY II" COURSE, MASTER DEGREE IN CHEMICAL ENGINEERING, UNIVERSITY OF CALABRIA
October 2009 -January 2010	UNIVERSITY TRAINER OF THE "TECHNIQUES OF ABATEMETN OF GASEOUS POLLUTANTS EFFLUENTS", MASTER DEGREE IN ENVIROMENTAL ENGINEERING, UNIVERSITY OF CALABRIA
October 2009 -January 2010	UNIVERSITY TRAINER OF THE " INDUSTRIAL CHEMISTRY II" COURSE, MASTER DEGREE IN CHEMICAL ENGINEERING, UNIVERSITY OF CALABRIA
March 2010 -June 2010	UNIVERSITY TRAINER OF THE "TECHNIQUES OF ABATEMETN OF GASEOUS POLLUTANTS EFFLUENTS", THREE-YAER DEGREE IN ENVIROMENTAL ENGINEERING, UNIVERSITY OF CALABRIA
A.A 2011 – 2018	UNIVERSITY TRAINER OF THE " CHEMICAL SYSTEM FOR ENERGY", MASTER DEGREE IN ENERGY ENGINEERING, UNIVERSITY OF CALABRIA
Academic years 2017-2018 *2018-2019* *2019-2020* *2020-2021*	TEACHING AT THE RESEARCH DOCTORATE COURSE, UNIVERSITY OF CALABRIA.
From February 2022 to today	TEACHING OF MATERIALS SCIENCE AT THE UNIVERSITY OF L'AQUILA
From February 2022 to today	TEACHING OF POLYMERS CHEMISTRY AT THE UNIVERSITY OF L'AQUILA

Editorial Collaborations

- Guest Editor of "Membranes" (MDPI) Special Issue: "Advanced Membrane Electrode Assembly (MEA) for Applications in Fuel Cell and Electrolyzer based Systems" .

SCIENTIFIC RESPONSABILITIES

- Scientific Responsability

for the DIATIC - TECHFEM collaboration at the Department of Environmental and Chemical Engineering relating to the "procedures for extracting polyphenolic fractions from olive processing waste".

RESEARCH ACTIVITIES

The research interests of the candidate concern various topics, mostly attributable to the area of applied heterogeneous catalysis:

The research activity carried out by the candidate from November 2004 to date has been focused on the synthesis of catalysts for the industrial process of producing Caprolactam with a low environmental impact. The research work carried out during these years has allowed us to identify some materials that are excellent catalysts for the Caprolactam production process. In particular, it was decided to use zeolite-type catalysts (ZSM-5, ZSM-11, MCM-41, B-ZSM-5, B-BEA, MTW) in a purely silicic form given their mild acidity. The study of the chemical properties of the aforementioned materials has led to important results regarding the identification of the functional groups present within the structure: the silanols, which determine their catalytic properties. The formation of these different silanol species is largely influenced by the different activation procedures. The activation procedures are responsible for the formation of the different OH groups in fact at basic pH the ion exchange promotes the formation of Si-OH groups while at an acid pH there is the formation of the geminal silanols responsible for the deactivation of the catalyst. The ion exchange at basic pH allows to better preserve the defective sites (of terminal silanol type) following the activation heat treatment at 450 ° C. The results of the catalytic tests show that the catalyst thus treated, compared to the non-exchanged one, is the most active (100% conversion of the oxime of cyclohexanone for more than 170 hours), while the selectivity to caprolactam never falls below about 80% for all catalysts tested. The combination of FT-IR and NMR analyzes allowed a better understanding of the OH species present in the structure. It was then possible to obtain very important information using 15N-NMR and 129Xe-NMR- analyzes which confirmed the differences between the differently activated catalysts. In works 3 and 4, the catalytic activity of Si-MCM-41 type mesoporous materials with a different distribution of pores and H-Silicalite-1 / Si-MCM-41 materials is studied. The presence of a mesoporous ness inside the catalyst greatly reduces both the selectivity and the stability of the catalyst itself in the Beckmann transposition reaction. The influence of the presence of boron in the zeolite structures of the MFI and BEA type was studied. In particular, the content of boron in the final structure was varied by means of different molar compositions of the synthesis gel and by post-synthesis acid treatments of deboronation. The aim of both procedures was to influence the type and density of the defective sites of the final zeolite structures. The choice fell on the boron atom because it is very easy to incorporate it and remove it from the structure. This operation is carried out through the catalyst activation treatments (calcination, ion exchange, acid treatments). Further studies in progress concern the synthesis and characterization of BEA-type materials in purely silica form using a material of the MCM-41 type as a source of silica with the aim of synthesizing catalysts with low acidity and a high number of defects in the structure.
Currently he carries out research on the preparation of zeolitic catalysts, and on the use in processes of industrial interest of zeolites in eco-sustainable processes in particular:
Synthesis of nanostructured zeolitic materials having different types of channels (MOR, TON, EUO, MTW, FER, MFI, BEA, CHA) and different acidity (quantity of acid sites and Brønsted / Lewis distribution). Furthermore, Ni-BEA and Ni-MFI catalysts were synthesized.
Evaluation of the catalytic performance and deactivation of zeolitic catalysts in various reactions of industrial interest. In particular, the effect of the type of acid zeolite channels on the conversion reaction of methanol to dimethyl ether (DME) was studied. Coke analysis by GC-MS and FT-IR allowed to study the composition of the coke deposited during the conversion reaction of methanol to dimethyl ether.
The production of DME by high pressure CO2 hydrogenation was investigated using zeolites on which copper, zinc and zirconium based oxides were co-precipitated. The results showed that the morphology of the crystals is essential to obtain satisfactory yields in DME.
Other studies concerned the application of Ga-MFI catalysts in the propane aromatization reaction for the production of BTX. The presence of extra-framework gallium (measured by NMR) was necessary for the production of BTX while a low acidity of the catalyst (low content of gallium or aluminum in the framework) allows to improve its selectivity.
Treatment of vegetation waters with carbon nanotubes for the separation of polyphenolic substances.

Treatment of personal data

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

Alfredo Aloise