

PERSONAL INFORMATION

Matteo Giavazzi



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Sex Male | Date of birth 18/05/1973 | Nationality Italian

WORK EXPERIENCE

2018 - present

Technology and Operations Director

Boldrocchi srl - 93, Viale Trento e Trieste, Biassono, 20853, ITALY

Technology and Operations direction of Company's Environmental Division (30 employees out of the 150 in the Italian branch of the Group). Responsible for the technological development of products (R&D) and the organization of resources (Project Management Office and Technical Office).

He directs the technological development of products based on the needs of customers and projects, sharing technological innovations with other Group offices (France, India, USA), also through lectures and seminars.

He supervises and organizes resources and projects, in order to optimize the planning of internal resources and external activities. He monitors and controls projects in order to highlight deviations from the Project Management Plan and identify possible corrective actions. He measures the performance of the project team and verifies the achievements of project milestones.

Business or sector Mechanical Industry - Engineering and Construction of industrial plants for flue gas treatment.

2009 - 2017

Technology, Process and Research Manager

Boldrocchi srl - 93, Viale Trento e Trieste, Biassono, 20853, ITALY

Environmental problems analysis, with particular reference to air pollution from industrial sources.

Definition of processes and dimensioning of equipment for environmental protection. Technical support to commercial staff in definition of offers and meeting with customers.

Technical Environmental audit of industrial manufacturing plants and processes.

Research and Development for processes and products improvement.

Projects coordination, interface with customers to solve claims.

Redaction of papers and speeches for technical conferences and presentations for customers.

Business or sector Mechanical Industry - Engineering and Construction of industrial plants for flue gas treatment.

2002 - 2009

Process Engineering Manager

Redecam Group SpA - 20, Piazza Montanelli, Sesto San Giovanni, 20099, ITALY

Coordination, planning and control of the team of Process Engineers in the design of Flue gas treatment industrial plants (equipment design, P&IDs, mass and energy balances); interface with the other technical resources (Mechanical and Electrical Engineering); Support to the commercial activity; Support to the General Direction for technical aspects.

Business or sector Mechanical Industry - Engineering and Construction of industrial plants for flue gas treatment.

2000 - 2002 Project Engineer, Project Manager

Fintecno Group - Molteni Officine Meccaniche S.r.l. - 45, Via alla chiesa, Senago, 20030, ITALY

Within technical department, he managed the projects of industrial plants, starting from studies of feasibility, offers, project of the hydraulic schemes, contacts with suppliers and with clients. Within commercial department, he supported the commercial team in order to solve particular technical problems with clients. Within production department, he managed the construction and start up of plants.

Business or sector Mechanical Industry – Chemical

1998 - 2000 Project Engineer

Fedegari Autoclavi SpA, SS 235 km 8, Albuzzano, 27010, ITALY

Within technical department, he managed the projects of "supercritical fluids extraction plants", starting from the redaction of plants process specifications and the size of the components. In particular he engineered two unities for the Chinese market. He was responsible of hydraulic schemes of the Autoclaves of sterilization, and of the editing of IQ – OQ specifications.

Business or sector Mechanical Industry – Chemical - engineering and construction of Autoclaves of sterilization and high pressure plants for chemical and pharmaceutical industry.

1998 - 1998 Consultant

University of Pavia, Institute of Hydraulic and Environmental Engineering

He collaborated with the staff of the institute in projects commissioned by external industries. In particular he studied the environmental impact of a waste to energy plant.

Business or sector University Institute

1997 - 1997 Consultant

Fiat Research Centre, 50, Via Torino, 10043 Orbassano, ITALY

Inside "Engine" Department of CRF, he analyzed, through mathematical modeling, the impact of mobile sources on air quality of urban centers and the effectiveness of the strategies of automotive industry in order to reduce the atmospheric pollution.

Business or sector Research Institute

EDUCATION AND TRAINING

1998 National Professional Qualification – Qualified Engineer

1992 - 1997 University Degree, Environmental Engineering, vote 109/110

1987 - 1992 "Liceo Scientifico" high school, vote 56/60

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | B2 | B2 | B2 | B2 | C1 |
| French | A2 | A2 | A2 | A2 | A1 |
| Spanish | A2 | A1 | A1 | A1 | A1 |

Communication skills Good communication ability in conferences, lessons and technical trainings.

Organisational / managerial skills Leadership; able to plan and organize work, coordinate a team, choose priority in activities.

Job-related skills More than 20 years' experience in engineering of Industrial plant in chemical, energy and environmental field. Experience in air quality problems, with reference to environmental impact of mobile and industrial sources and strategies to reduce pollution

Digital competence

| SELF-ASSESSMENT | | | | |
|------------------------|-----------------|------------------|------------------|------------------|
| Information processing | Communication | Content creation | Safety | Problem solving |
| Proficient user | Proficient user | Proficient user | Independent user | Independent user |

Other skills He gives free advices and support about environmental matters to political parties or organizations.

Driving licence B

ADDITIONAL INFORMATION

Publications See attached list of publications

Main Courses Il Controllo di Progetto: monitoraggio e stato avanzamento lavori

Executive Master in Project Management

Autodesk Simulation CFD Motion

Campionamenti in Emissione nel rispetto delle Metodiche e Normative vigenti

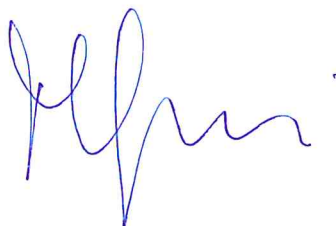
Emissioni sonore da impianti di produzione: problemi e soluzioni

ANNEXES

The use of CALPUFF dispersion model for air quality simulation.

List of publications

Ugento, 15/12/2020



MATTEO GIAVAZZI

Publications

A DESCRIPTIVE MODEL FOR A PILOT-SCALE WET ELECTROSTATIC SCRUBBER

JOINT MEETING THE GERMAN AND ITALIAN SECTIONS OF THE COMBUSTION INSTITUTE, SORRENTO, ITALY – 2018

This paper reports the preliminary results of a modelling study of a pilot scale wet electrostatic scrubber, aimed to provide accurate design and operating tools to sustain process scale up. The model comprises a CFD analysis of the scrubber (including spray pattern estimation), performed with a commercial software, and a proprietary post-processing model for the calculation of particle depletion inside the unit.

Authors: M. Giavazzi, Boldrocchi srl, M. Esposito, C. Carotenuto, A. Lancia, F. Di Natale University Federico II, Naples

Eradicating NOx

World Cement, April 2018

Many Cement Plant around the world have had to incorporate DeNOx technologies to limit emissions of nitrogen oxides mainly from clinker production kilns. Now, and going forward, an increasing number of cement plants will have to upgrade their DeNOx technologies to comply with increasingly strict emissions regulations.

Author: Matteo Giavazzi, Luca Maiocchi, Boldrocchi srl

High Temperature Filtration using “Ceramic Candle Filters”: Advantages and Applications

Hydrocarbon Engineering, April 2017

As environmental regulations become increasingly stringent around the world and social/internet media are able to spread embarrassing news of environmental non-compliance within minutes, oil & gas companies, like those in other industries, are feeling the need to ensure conformity (often with expensive upgrades to systems) while finding ways to reduce operating expenses. One such way, allowing producers to reduce OPEX in their air pollution control systems, is a technology gaining increasing interest – filtration using ceramic filters. It offers many benefits to the oil & gas industry: it provides optimal filtration efficiency while withstanding high operating temperatures and is particularly useful when looking to increase heat recovery and/or comply with stringent emission regulations. What's more, the use of ceramic filters reduce OPEX as they require less energy, fewer cleaning cycles and reduced downtime while foregoing the need for cooling systems.

Author: Matteo Giavazzi, Process Engineering Manager

CAPTURING FINE DUST

World Cement, August 2016

Lack in performance and difficulty in complying with the latest emission standards for cement plants when using traditional Electrostatic Precipitators (ESP) can be tackled in several ways. Many projects have been successfully accomplished by adding to Electrostatic Precipitators a Bag Filter section (Hybrid Filters), or transforming the ESP into a new Bag Filter. A further problem, which is likely to be addressed by future legislation, is the reduction of submicronic particles and the introduction of new limits in terms of number and size of particles on top of dust concentration. Indeed, cement plants emit large amount of particles in the submicronic range, but in spite of the recognized toxicological effects, there are still regulations pertaining to the control of submicron particle concentration in the air.

Authors: Matteo Giavazzi, Process Engineering Manager, Fancesco Di Natale, Professor University Federico II, Naples

WET ELECTROSTATIC SCRUBBING FOR ADVANCED DUST CLEANING IN SINTER PLANTS

Millennium Steel, 2016

The scope of this work is to present model predictions on the use of wet electrostatic scrubbing (WES) as a mean to remove different kind of submicron particles present in the exhausts of sinter plants. The WES system can remove over 90% of both iron, silica and alkali chlorides particles by using 1 kg of electrified water per kg of gas. WES units contemporary give a removal of acid compounds and can overcome some of the limits of ESP and bag-filter in sinter plants applications.

Authors: Matteo Giavazzi, Process Engineering Manager, Fancesco Di Natale, Professor University Federico II, Naples

ABBATTIMENTO DI OSSIDI DI AZOTO DA COMBUSTIONE DI BIOMASSE TRAMITE SISTEMI SCR: CRITERI DI PROGETTAZIONE ED ESPERIENZE

Giornata di Studio "Le Biomasse come vettore energetico: quali prospettive?", Associazione Termotecnica Italiana, 20 Aprile 2016.

Gli ossidi di azoto (NO ed NO₂, nel complesso indicati come NO_x) sono composti inquinanti emessi in atmosfera a seguito di processi di combustione ad alta temperatura (combustioni industriali, impianti di riscaldamento civili, motori di autoveicoli, ecc.), per ossidazione dell'azoto atmosferico e, in parte, per l'ossidazione dei composti dell'azoto contenuti nei combustibili utilizzati. Accanto alle tecniche di controllo primarie che vengono utilizzate per ridurre la formazione degli NO_x, i metodi catalitici permettono di ridurre fortemente le emissioni residue in atmosfera, fino a valori inferiori ai limiti fissati dalle normative e dalle Autorizzazioni. La presentazione descrive le tecniche di progettazione utilizzate ed alcune esperienze di abbattimento degli NO_x generati dalla combustione di biomasse solide (cippato di pino, paglia, rifiuti) tramite reattore SCR ed iniezione di urea o ammoniaca.

Autore: Matteo Giavazzi

A MODEL SOLUTION

World Cement, March 2015

CFD (Computational fluid dynamics) is a computer-aided engineering tool widely used in the dimensioning of industrial equipment. It is used to investigate the thermo and fluid dynamics of flue gas entering Bag Filter, Electrostatic Precipitator, Gas Conditioning Tower.

Real performances of dedusting equipment are sometimes quite different in respect to the ones foreseen during the design phase; gas behavior inside the equipment is often responsible for the lack of performance.

CFD can calculate the combined effects of fluid flow, heat transfer, mass transfer and species mixing, predicting the real performance; it deals with the complexity of the Navier-Stokes equations, which describe the flow-related characteristics with a system of non-linear partial differential equations.

In this article we start from the analysis of the governing equations at the basis of CFD calculations; we describe the cases in which a monophasic approach is the optimal solution, as it combines low computational time with good calculations of speed fields; then we analyse the cases in which a multi-phase approach is required, in order to get a complete investigation of the phenomena occurring inside equipment.

NEW TECHNOLOGIES FOR THE REMOVAL OF SUBMICRON PARTICLES IN INDUSTRIAL FLUE GASES

Megalia Environmental foundation

April 8, 2014

Recent findings in toxicology showed the high toxicity of particles finer than 1 microns, that are currently not included in environmental regulations for industrial emissions. Nevertheless, social awareness of the possible correlations among particulate exposure and severe diseases in population living close to industrial areas is limiting the development of new industrial plants and, in some...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Francesco Di Natale, Professor University Federico II, Naples

Better cleaning at length

International Cement Review

January 1, 2014

Boldrocchi has developed a two-pronged test to quantify the most efficient system settings for cleaning different sized filter bags. The tests involve a physical model of a baghouse system as well as Computational Fluid Dynamic (CFD) simulation, which enable Boldrocchi to better evaluate efficient filter media cleaning with energy savings.

Authors: Matteo Giavazzi, Process Engineering Manager, Ottavio Mantovani, Impiegato tecnico presso Boldrocchi

Impianti a biomassa, la qualità si misura in decibel

L'Industria Meccanica

October 15, 2013

Al fine di valutare la sostenibilità di un progetto, è fondamentale l'impatto derivante dalle emissioni causate dall'impianto, siano esse relative ai composti chimici generati dalla combustione e immessi in atmosfera, oppure relative alle emissioni sonore delle apparecchiature che costituiscono l'installazione.

Si vuole qui descrivere come siano state ridotte in modo consistente le emissioni...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Franco Abbiati, Boldrocchi Aeroto Director, Luca Monzardo, Boldrocchi Aeroto Project Engineer

Better Bag Cleaning

World Cement

June 1, 2012

In the filtration process, the dust transported by combustion gas is arrested on bags external surface, forming the so called "cake". The dust cake builds up while filtration process goes on, with a speed depending on dust quantity, dust characteristics and air/cloth ratio. Bag Filter pressure drop consequently increases and gas flow decreases with dust cake thickness.

The dust cake must be...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Carlo Osnaghi, Professor Politecnico di Milano

The Conversion of an Electrostatic Precipitator into a Bag Filter

São Paulo sedia XXVIII Congresso técnico FICEM – APCAC

September 5, 2011

The electrostatic precipitators were widely used for many years in order to reduce emissions from industrial processes.

The evolution in emission standards requested from legislations and problems related to residual high emissions from electrostatic precipitators during transients determine the necessity to switch to fabric filtration.

A cheap and quick way to improve a filter performance is to...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Alberto Pedrinoni, Boldrocchi Ecologia Commercial Director

POWER PLANTS FEED WITH WOOD BIOMASS

POWER-GEN India & Central Asia 2011

May 3, 2011

Power plants fed by virgin wood produced near the site use biomass in a carbon neutral way; in comparison to a coal plant, CO2 savings are thousands of tons/year.

To get full sustainability and minimize environmental impact, it is necessary to guarantee extremely low emission levels (dust, acids from sulfur and chlorine, nitrogen, metals) by means of technologically advanced and performing flue...[more](#)

Author: Matteo Giavazzi, Process Engineering Manager

La sostenibilit  ambientale del processo di combustione nella produzione di cemento

Megalia Environmental foundation

April 13, 2011

Nel lavoro si approfondisce il modo in cui pu  essere possibile, dal punto di vista tecnico, soddisfare le richieste di normative sempre pi  stringenti in termini di inquinamento ed emissioni, senza gravare in modo eccessivo sulle risorse finanziarie del settore della produzione del cemento, settore pesantemente penalizzato dalla crisi economica, ma al quale si richiedono investimenti di...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Paolo Saccenti, Boldrocchi Service Director

Technologies and Strategies to Minimize Residual Emissions from Bag Filters

Loesche America 12th Annual Discussions of the Round Table Symposium

December 1, 2010

The U.S. Environmental Protection Agency is acting to control the emissions of mercury, particle pollution and other pollutants from Portland cement manufacturing in the United States. The EPA maintains that when fully implemented in 2013, annual Particulate Matter emission will be reduced by 11,500 tons or 92 percent.

How to achieve it? Bags Technology and Bag Filters dimensioning parameters.

Authors: Matteo Giavazzi, Process Engineering Manager, Alberto Pedrinoni, Boldrocchi Ecologia Commercial Director

NUOVA VITA AD UN ELETTROFILTRO OBSOLETO

GAS AND POWER MAGAZINE

October 1, 2010

L'evolversi degli standard di emissione richiesti dalle normative, sempre più stringenti nel corso degli anni, e le problematiche connesse con l'influenza delle condizioni di processo sull'efficienza di captazione, determinano la sempre più frequente necessità di sostituire elettrofiltri esistenti con filtri a maniche.

Il lavoro prende in esame un'alternativa alla completa sostituzione dell'...[more](#)

Author: Matteo Giavazzi, Process Engineering Manager

La Riduzione dell'Impatto Ambientale da Combustione di biomassa solida

FEI - Forum Energetico Internazionale

June 16, 2010

FORUM ENERGETICO INTERNAZIONALE: IDEE, PROGETTI E NUOVI ORIZZONTI INTERNAZIONALI. Al Castello Svevo di Barletta il 16 e 17 giugno Gas, Elettricità, Nucleare e Rinnovabili sono state le molteplici facce di un'unica grande protagonista: l'ENERGIA

Author: Matteo Giavazzi, Process Engineering Manager

LA RIDUZIONE DELL'IMPATTO AMBIENTALE DA COMBUSTIONE DI BIOMASSA SOLIDA ATTRAVERSO LE TECNOLOGIE DI DEPURAZIONE FUMI

ATI - Biblioteca di Termotecnica - 47 - Mag 10 - Bioenergie

May 20, 2010

Il lavoro prende in esame le tecnologie disponibili per limitare le emissioni derivanti dalla combustione di biomasse solide, portando esempi di realizzazioni di Linee Fumi su forni di combustione di cippato di legno.

Vengono in particolare esaminati i dettagli impiantistici ritenuti determinanti per ottenere le prestazioni finali del Sistema di Depurazione Fumi, le esperienze maturate nella...[more](#)

Author: Matteo Giavazzi, Process Engineering Manager

CFD MODELLING OF DRY FLUE GAS DESULPHURITATION SYSTEM INSTALLED IN INDUSTRIAL GLASS FURNACE

Proc. XXVII Congresso Nazionale UIT sulla Trasmissione del Calore

June 24, 2009

L'industria del vetro è caratterizzata da un elevato consumo di energia per il processo produttivo che è basato sul riscaldamento ad alta temperatura dei materiali grezzi al fine di fondere i vari costituenti e rendere omogeneo il composto ottenuto. Questo processo è generalmente condotto all'interno di forni che vengono riscaldati direttamente attraverso la combustione di combustibili fossili...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Emanuela Colombo, UNESCO Chair in Energy for Sustainable Development at Politecnico di Milano

Fabio Inzoli, Professor at Politecnico di Milano, Riccardo Fumagalli, Process Engineer at Terruzzi Fercalx S.p.a., Ferruccio Miglietta Professore a contratto di Fisica Tecnica al Politecnico di Milano - Competenze ISO 9001, ISO 13485 Dir. 93/42/CEE

FLOW DYNAMIC ANALYSIS AND OPTIMIZATION OF AN INDUSTRIAL BAG FILTER

Proc. XXVII Congresso Nazionale UIT sulla Trasmissione del Calore

June 22, 2009

This paper is related to analysis and optimization of an industrial device, hybrid filter, for flue gas treatment. The hybrid filter studied is composed by the assembly of an electrostatic filtering (ESP) section followed by bag filters (BF). The simulation results highlight a critical fluid behaviour at the bottom of the bags. A wide area is subject to a velocity exceeding 2 m/s which is...[more](#)

Authors: Matteo Giavazzi, Process Engineering Manager, Emanuela Colombo, Davide Francesco Bonalumi