

# CURRICULUM VITAE



## Personal information

Surname / First name **Alberto Fragiacom**  
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E-mail **alberto.fragiacomo@wemes.it**  
Nationality **Italian**  
Place and Date of birth **Mestre-Venice Italy the 30 August 1959**  
Gender **Male**

## Work experience

Dates	March 1997 at today
Occupation or position held	<b>Engineering Coordination Manager</b>
Main activities and responsibilities	<b>General Manager</b>
Name and address of employer	<b>WEMES Consulting srl</b> <b>Via Rossini 31/A I-30171 Mestre-Venezia ITALY</b>
Type of business or sector	<b>Industrial Engineering Consulting and Service</b>
TES Transformer Electro Service Srl Ospitaletto (BS) Italy	2011 Saturable Reactor Project and design for TERNIUM-TENARIS Argentina
SIEM Cividale del Friuli (UD) Italy	2011 Study of electrical network with the electrical machines specific issue of the protection relay planning, load flow, short circuit currents, motors starting, for the system Steelmaking plant TENOVA Shadegan IRAN,
Riva Acciaio Verona(VR) Italy	2011 Measures and Analysis on Medium Voltage on fictitious star point
SIEM Cividale del Friuli (UD) Italy	2011 Study of electrical network with the electrical machines specific issue of the protection relay planning, load flow, short circuit currents, motors starting, for the system Steelmaking plant TENOVA Ardakan-chadormalu IRAN,
RUGUI Olvega-Soria Santander Spain	2011 Project of 5 ^ 7 ^ harmonic filters for power factor correction 18Mvar 22kV for medium voltage induction furnaces
SIEM Cividale del Friuli (UD) Italy	2010 Study of the electrical network with the emission specifications for electric machines and planning for a SVC Static Var Compensator from 190Mvar, load flow, short circuit currents for the system Steelmaking plant TENOVA Shadegan IRAN,
SIEM Cividale del Friuli (UD) Italy	2010 Study of the electrical network with the emission specifications for electric machines and planning for a SVC Static Var Compensator from 240Mvar, load flow, short circuit currents for the system Steelmaking plant TENOVA Ardakan-chadormalu IRAN,
RUGUI Olvega-Soria Santander Spain	2010 Project RC filter for vacuum circuit breaker on arc furnace EAF in coordination with the overvoltage surge arresters
FERRIERE Nord Osoppo (UD) Italy SIDERPOTENZA (PZ)	2010 Measurements of electrical disturbances on the electrical network analysis of high voltage 150kV, analysis of the arc furnace EAF, calculation of the curves of work Circle Diagrams for EAF furnace with SVC.
Acciaierie di Calvisano (BS) Italy Gruppo FERALPI Lonato (BS)	2010 Measurements of electrical disturbances on the electrical network analysis of high voltage 132kV, analysis of the arc furnace EAF, calculation of the curves of work Circle Diagrams for EAF furnace with SVC.
RUGUI Olvega-Soria Santander Spain	2010 Project and electrical specifications for the arc furnace transformer for LF 7.2MVA and its working curves with Circle Diagrams, project electrical specifications with step-down transformer 78MVA

Studio Ingegneria Cavallino (VE) Italy	2010	Measurements of radiated electromagnetic fields at 50Hz by electric power line to 132kV
ETM TIRONI Modena (MO)	2010	Measurements of overvoltages on a furnace transformer in plant AURUBIS Hamburg Germany
Acciaierie San Zeno (BS) Italy gruppo DUFERCO	2010	Analysis on performance measures for a Static Var Compensator by 175Mvar
Studio Architettura Mogliano (TV) Italy	2010	Measurements of radiated electromagnetic fields at 50Hz by electric power line to 380kV
PIEMME Fagagna (UD) Italy	2010	Project RC filter for vacuum circuit breaker on arc furnace EAF in coordination with the overvoltage surge arresters in plant SA Steelwork South Africa
Riva Acciaio Verona(VR) Italy	2009	Analysis of operating differences in arc furnaces EAF1 and EAF2 for the economic evaluation of new investments in electrical revamping
Studio Ingegneria San Donà Italy	2009	Measurements of radiated electromagnetic fields at 50Hz by electric power line to 220kV
Riva Acciaio Verona(VR) Italy	2009	Electrical measurements and analysis of the medium voltage on Services Transformer in steelworks, Rolling mill, electric disturbances on the electric network, load analysis for the project design of the new power factor compensation of 5 <sup>th</sup> harmonic filter by 18Mvar on 30kV
Acciaierie di Calvisano (BS) Italy Gruppo FERALPI Lonato (BS)	2009	Measurements of electrical disturbances and electric network analysis in high voltage 132kV, analysis of the arc furnace EAF working, EAF furnace secondary impedance measurement using the harmonic emission, calculation of the curves of work Circle Diagrams EAF furnace with SVC 165Mvar.
Acciaierie di Calvisano (BS) Italy Gruppo FERALPI Lonato (BS)	2009	Study of the electric network with the emission specifications and planning for a new Static Var Compensator by 165Mvar, load flow, short circuit currents
FERRIERE Nord Osoppo (UD) Italy	2009	Electrical measurements, analysis of the arc furnace EAF, calculation of the curves of work Circle Diagrams of EAF furnace with SVC 115Mvar commissioning and testing of the new furnace transformer by 120MVA.
Riva Acciaio Verona(VR) Italy	2009	Electrical measurements, analysis and verification of the EAF furnace 3 <sup>rd</sup> harmonic filter 25Mvar after failure and its repair
Acciaierie di Calvisano (BS) Italy Gruppo FERALPI Lonato (BS)	2008	Electrical measurements and analysis of flicker disturbance on the electric network, harmonic spectrum of 132kV High Voltage, analysis of the arc furnace EAF, spectral density and design and project of a 5 <sup>th</sup> harmonic filter by 23Mvar 30kV
Riva Acciaio Verona(VR) Italy	2008	Electrical measurements and analysis and testing of the filter reactors and capacitors of 36Mvar EAF furnace harmonics filter, after a failure and its repair, project design and commissioning of a 3 <sup>rd</sup> harmonic filter for 42Mvar 30kV
Acciaierie di Calvisano (BS) Italy Gruppo FERALPI Lonato (BS)	2008	EAF furnace analysis, calculation of the curves of work circle diagrams of the arc furnace with a transformer of 80MVA for EAF
Riva Acciaio Verona(VR) Italy	2008	Measures of electrical power and electric disturbances, measurement analysis, project design of a 3 <sup>rd</sup> harmonic filter by 30Mvar 30kV
FERRIERE Nord Osoppo (UD) Italy	2008	Design and project of the new transformer for EAF 100/120MVA furnace 150t, EAF furnace analysis, calculation of the curves of work Circle Diagrams for EAF furnace with SVC 115Mvar
CEA Elettroapplicazioni Travagliato (BS) Italy	2008	Study of the electric network with the specifications emission and planning for a Static Var Compensator by 120Mvar, load flow, short circuit currents, in the system Perwaja Malaysia plant, for the new CONCAST EAF furnace from 90MVA, and DC arc furnaces for DRI
FERRIERE Nord Osoppo (UD) Italy	2008	Measurements of electrical disturbances on the electric network, analysis of high voltage 220kV, analysis of the arc furnace EAF, EAF furnace secondary impedance measurement using the harmonic emission and analytical calculation, calculation of the curves of work circle diagrams of the furnace for EAF 65/75MVA with SVC 90Mvar.
CEA Elettroapplicazioni Travagliato (BS) Italy	2008	Project RC filters / MOV for vacuum circuit breaker to LF furnace in coordination with the overvoltage surge arresters for the plant NEDSTAAL Holland
CEA Elettroapplicazioni Travagliato (BS) Italy	2008	Project RC filters / MOV for vacuum circuit breaker to LF furnace in coordination with the overvoltage surge arresters for the plant LLC Ucraina
Schneider Electric Stezzano (BG) Italy	2008	Project and commissioning for RC filters / MOV for vacuum circuit breakers to EAF and LF furnaces in coordination with the overvoltage surge arresters for the plant DUFERCO Acciaierie San Zeno Brescia Italy
Marzotto Valdagno (VI) Italy	2008	Thermography for maintenance of electrical installations in High and Medium Voltage
CEA Elettroapplicazioni Travagliato (BS) Italy	2008	Coordination and setting of the protections relay for the 3 <sup>rd</sup> harmonic filter for arc furnace EAF in plant: Acciaierie Venete in Camin (PD) Italy
Schneider Electric Stezzano (BG) Italy	2007	Project design and specification emission for EAF Series Reactors, calculation of standard curves for arc furnace Circle Diagrams of a 100MVA EAF, Project RC filters / MOV for vacuum circuit breakers to EAF and LF furnaces in coordination with the overvoltage surge arresters for the plant DUFERCO Acciaierie San Zeno Brescia Italy
CEA Elettroapplicazioni Travagliato (BS) Italy	2007	Project RC filters / MOV for vacuum circuit breakers to EAF and LF furnaces in coordination with the overvoltage surge arresters for the plant ACP di Cividate al Piano (BG) Italy
Riva Acciaio Verona(VR) Italy	2007	Electrical measurements and analysis of the medium voltage of the services Transformer for Rolling Mills 2 and 3, disturbances on the electric network, analysis of the loads and harmonic flow
CEA Elettroapplicazioni Travagliato (BS) Italy	2007	Project RC filters / MOV for vacuum circuit breakers to EAF and LF furnaces in coordination with the overvoltage surge arresters for the plant in Russia 35kV
DUCATI Energia Bologna (BO)	2007	Writing manuals for RC-C filters and PCF Power factor compensation harmonics filters in Italian and English
FERRIERE Nord Osoppo (UD) Italy	2007	Design and project of the new furnace transformer for 100/120MVA with drafting of

		specifications, calculations of the curves of work circle diagrams of the EAF arc furnace with SVC 115Mvar and design of Series Reactors with electrical specifications
Riva Acciaio Verona(VR) Italy	2007	Project and design of Series reactors of the two EAF arc furnaces for 60MVA and 72MVA with drafting of specifications, calculations of the curves of work in circle diagrams of the EAF furnace with a fixed harmonics filtered power factor correction
ABS Acciaierie Bertoli Safau Pozzuolo del Friuli (UD)	2007	Electrical measurements with analysis of the medium voltage of 36MVA and 45MVA services Transformers for Rolling Mills LUNA, 2 and 3, electrical disturbances on the power supply network, analysis of the output harmonic flow with loads
CEA Elettroapplicazioni Travagliato (BS) Italy	2007	Measures and design project of harmonics filters for power factor compensation tuned on 11 ^ 13 ^ harmonic of the Foundries with induction furnaces in the plant San Zeno (Brescia) Italy
DUCATI Energia Bologna (BO)	2007	Drawing up specifications for three groups of harmonics filters 2nd 3rd 4th 5th harmonic for SVC for ASI Ansaldo Industrial Systems to Iran and Russia and the DANIELI for a Rolling mill in Brazil 5th and 7th harmonic tuned
Acciaierie Venete Camin (PD) Italy	2007	Measurements of Electromagnetic Fields on inductors up to 100kHz for the hardening of steel bars
Azienda Servizi Municipalizzata Brescia Italy	2007	Study of medium-voltage electric network with a connection for a system with induction furnaces
CEA Elettroapplicazioni Travagliato (BS) Italy	2007	Project and design of RC filters / MOV for Siemens vacuum circuit breakers for LF furnace in coordination with the overvoltage surge arresters for the plant to Rolling Mills YADZ IRAN 20kV
El Engineering Service srl Torino (TO) Italy	2006	Planning and setting with selective protection relay on medium voltage with power generation in plant BURGO Avezzano Italy
Studio Architettura San Vito al Tagliamento (VE) Italy	2006	Measurements of radiated electromagnetic fields at 50Hz electric power line to 132kV
CEA Elettroapplicazioni Travagliato (BS) Italy	2006	Project and design of RC filters / MOV for Siemens vacuum circuit breakers for EAF and LF furnace in coordination with the overvoltage surge arresters for the plant Acciaierie Venete Sarezzo (BG) Italy
ABS Acciaierie Bertoli Safau Pozzuolo del Friuli (UD)	2006	Measures and analysis of medium voltage electrical network for harmonics flow of 36MVA and 45MVA services Transformers in LUNA Rolling Mills n°2 and n°3, electric disturbances on the power network, analysis of the harmonic emission by loads for a new tuned harmonics filtered power factor compensation
FERRIERE Nord Osoppo (UD) Italy	2006	EAF furnace transformer of 63MVA, calculation of the curves of work Circles Diagrams EAF arc furnace with SVC 90Mvar
ABS Acciaierie Bertoli Safau Pozzuolo del Friuli (UD)	2006	Thermography for maintenance of electrical installations in High 220kV and Medium Voltage 22kV
CEA Elettroapplicazioni Travagliato (BS) Italy	2006	Project and design of RC filters / MOV for Siemens vacuum circuit breakers for EAF and LF furnace in coordination with the overvoltage surge arresters for the plant ACP di Cividate al Piano (BG)
EDISON Energia Milano (MI)	2006	Infrared Thermography for thermal testing on high voltage 380kV line Torviscosa-Planais Udine Italy
CEA Elettroapplicazioni Travagliato (BS) Italy	2006	Project and design of RC filters / MOV for Siemens vacuum circuit breakers for EAF 80MVA and LF furnace in coordination with the overvoltage surge arresters for the plant Acciaierie San Zeno Duferco (BS) Italy
CEA Elettroapplicazioni Travagliato (BS) Italy	2005	Project and design of RC filters / MOV for Siemens vacuum circuit breakers for EAF 70MVA and LF furnace in coordination with the overvoltage surge arresters for the plant, planning and setting with selectivity of protection for the EAF / LF furnaces for the plant ADELCA Equador
Riva Acciaio Verona (VR) Italy	2005	Electrical measurements and analysis for verification of the EAF arc furnaces operation for inserting the Stability detector and Dynamic corrector for Active and Reactive Power of the working point of the EAF2 furnace
FERRIERE Nord Osoppo (UD) Italy	2005	Measurement and calculation of the secondary impedance with deep-test in the EAF furnace because to be included in calculations of Circles diagrams of the furnaces with SVC 90Mvar
Riva Acciaio Verona (VR) Italy	2004	Electrical measurements and analysis for verification of the EAF arc furnaces operation for inserting the Stability detector and Dynamic corrector for Active and Reactive Power of the working point of the EAF1 furnace
SIOT TAL Oleodotto Transalpino Trieste (TS) Italy	2004	Thermography for maintenance of electrical installations in High and Medium Voltage and High Voltage 132kV electric lines
LME Valenciennes France	2004	Electrical measurements and analysis for verification of the LF AC furnaces and EAF DC 84MVA furnaces for the inclusion of a Stability detector and Dynamic corrector for Active and Reactive Power in the working point of the EAF1 DC furnaces and LF furnace
El Engineering Service srl Torino (TO) Italy	2004	Measures, project and design for changes and revamping of power factor corrector, harmonics tuned filtered on 20kV, Planning and setting for selectivity of the medium voltage protections relay, in a power generation plant ILTE Moncalieri (TO), Italy
ABS Acciaierie Bertoli Safau Pozzuolo del Friuli (UD)	2004	Thermography for maintenance of electrical installations in High and Medium Voltage for AC and DC, EAF and LF furnaces on 22kV distribution and 220kV electrical substation
Gemmo Impianti SpA Arcugnano (VI) Italy	2004	Infrared thermography for heat loss energy certification and verification Bassett Hospital San Bassano del Grappa (VI) Italy
Riva Acciaio Verona (VR) Italy	2004	Study of the load flow, short circuit currents, harmonics flow in electrical network distribution and power supply with the issue of planning and setting protections relaying specifications,
Riva Acciaio Verona (VR) Italy	2004	Electrical measurements and analysis for verification of EAF furnaces in the electrical distribution of Active and Reactive Power loads, harmonics flow and flicker voltage disturbance of the 43MVA EAF1 and 43MVA EAF2 furnaces

Ingegneria Rossitto Venezia Italy	2003	Infrared Thermography for the architectural heritage to the Canossa Palace in Verona Italy
CORTEH – Leitner canal San Bovo (TN) italy	2003	Infrared Thermography for the thermal distribution of the flow of air to form snow crystals at low temperatures
FERRIERE Nord Osoppo (UD) Italy	2003	Calculation of Circular diagrams of the EAF furnace with 90Mvar SVC with the positions of the series reactor on 1ohm and 0ohm
HSR Engineering Milano Italy Hospital	2003	Measurements of the Electromagnetic Fields by 50Hz up to 100kHz for the malfunctioning-fealiure of an ultrasound echo-graph
EDISON Energia CAFFARO	2003	Surveys and measurements using Thermal Infrared thermography for defects on Dams for hydroelectric power generation
Riva Acciaio Verona (VR) Italy	2002	Study for load flow, short circuit currents, harmonics flow of the electric network with the issue of planning and setting of the specifics on protections relaying
Riva Acciaio Verona (VR) Italy	2002	Load Flow Study of the electricity electric grid, short circuit currents, harmonics flow through with issue changing of the specifications for filters 3 <sup>rd</sup> and 2nd harmonic filters by 36Mvar and 22Mvar on 30kV for their recovery after a failure, verification and tests measures for re-startup
FERRIERE Nord Osoppo (UD) Italy	2002	Measurement with deep test and calculation of the secondary impedance of the EAF furnace that can be included in calculations of Circles diagrams of the furnaces with transformer by 85MVA and 90Mvar SVC
FERRIERE Nord Osoppo (UD) Italy	2002	Thermography for maintenance of electrical installations and distribution in High and Medium Voltage EAF and LF furnaces on 21kV and 220kV electrical substation
SONDEL EDISON Energia	2002	Infrared thermographic surveys with helicopter air dispatch on electric power lines 220kV and 132kV in High Voltage
FERRIERE Nord Osoppo (UD) Italy	2002	Calculation of Circular diagrams of the EAF furnace with 90Mvar SVC with position of the series reactors on 1.2ohm and a impedance secondary by 2.28mohm
FERRIERE Nord Osoppo Italy	2002	Commissioning and startup of the new EAF and LF furnaces and the new 90Mvar SVC
Nuova Pansac Gambarare di Mira (VE)	2001	Measures voltage drop from the MT electrical network LV distribution
Kervan Brunico (BZ)	2001	Thermography Course: practical exercises for building constructions
Ferriere Nord Osoppo (UD)	2001	Thermographic measurements in the electrical and thermal plant
Ferriere Nord Osoppo (UD)	2001	II <sup>^</sup> phase commissioning for revamping of the plant Ferriere Nord SpA (Osoppo UD)
Ferriere Nord Osoppo (UD)	2001	EAF process working curves of the EAF furnace without saturable reactor. September 2001
Ferriere Nord Osoppo (UD)	2001	Working curves of the LF furnace with and without EAF
Ferriere Nord Osoppo (UD)	2001	EAF working process curves of the furnace with saturable reactors 76MVA
Ferriere Nord Osoppo (UD)	2001	Measurements of Flicker voltage 220kV with and without saturable reactor. Analysis of measurements made on the 220kV line HV power supplier ENEL. July-September 2001
Ferriere Nord Osoppo (UD)	2001	Coordination and setting of the relay protections on MV for EAF arc furnaces and High Voltage
Ferriere Nord Osoppo (UD)	2001	Load Flow Calculation HV-MV, short-circuit currents of the furnaces EAF + LF
Comune di Casier Dosson di Casier (TV)	2001	Evaluation of the design project of 'ENEL Distribution', for the reduction of the magnetic induction fields at 50 Hz in the ELF band (5Hz - 100kHz). 132kV line Vacil ÷ S.187A S.182A T.685 East Treviso in the schools 'Vivaldi and Valeri' Dosson di Casier (TV)
Ferriere Nord Osoppo (UD)	2001	I <sup>^</sup> phase commissioning for revamping of the plant Ferriere Nord SpA (Osoppo UD)
Ferriere Nord Osoppo (UD)	2001	Measurements and analysis of electrical network harmonics penetration and Powers PQVI with optimization of the EAF furnace
Condominio Le Querce Mestre (VE)	2001	Thermographic measurements on Buildings Construction of heat loss of a civic building.
Saipem (MI) Cortemaggiore (PC)	2001	Thermographic measurements for thermal analysis of electric arc welding of pipes.
Ing. Mondelli Mestre (VE)	2001	3GHz-band EHF EMF measurements which show the firms SIT, ECIS in Marghera (VE)
Ing. Rossitto Venezia (VE)	2001	Thermographic measurements for construction humidity in Dolo (VE)
Ferriere Nord Osoppo (UD)	2001	Working curves Circle Diagrams with SVC 85MVA for EAF and LF furnaces
C&G Engineering Padova (PD)	2000	Study of the electromagnetic transient stability of the generator ANSALDO GSC800
IRCA SpA San Vendemiano (TV)	2000	Thermographic measurements in project RIBBON
IRCA SpA San Vendemiano (TV)	2000	Thermographic Analysis Measurement project RIBBON
El engineering Torino (TO)	2000	Thermographic measurements in the Electrical plant: ICS (Canonica D'Adda BG)
El engineering Torino (TO)	2000	Thermographic measurements in the hot plates plant: ICS (Canonica D'Adda BG)
Acciaierie Venete Camin (PD)	2000	Simulations to study and project design of RC filters at primary and secondary side of LF 1-2 furnaces
Ferriere Nord Osoppo UD	2000	Thermographic measurements in the electric plant: Ferriere Nord SpA (Osoppo UD)
FASSA Spresiano (TV)	2000	Measurements of electric field in the ELF band (5 Hz-100 kHz). Analysis of electric fields measurements in the areas identified for peoples
C&G Engineering Padova (PD)	2000	Case Study of integration of the transient stability of the generator ANSALDO GSC800
RIVA Acciaio Stab. Verona (VR) acciaierie Galtarossa SpA	2000	Verification and analysis of measures Powers P, Q, V, I on transformer2 with harmonics emission of the 80MVA 30kV transformer
ASM Brescia (BS)	2000	CEI 11-1 Earthing global project
Zanussi Elettromecc. Stab. Rovigo (RO)	2000	ultrasound Control and FEM analysis for the determination of the possible causes of failure of the 33242 balance shaft in a eccentric press BALCONY
Zanussi Elettromecc. Stab. Rovigo (RO)	2000	Measurements of electromagnetic fields in the ELF band (5 Hz-100 kHz). Analysis of fields measurements in the areas identified for the peoples
Acciaierie Venete Camin (PD)	2000	Measurements of electromagnetic field in the ELF band (5 Hz-100 kHz). Analysis of field measurements in the areas identified for the peoples
C&G Engineering Padova (PD)	2000	Measurements and analysis of vibration of a mobile crusher for cement ITALCEMENTI in Matera (MT)
CEA-ASO Ospitaletto (BS)	2000	Project and design of circuit-breaker switches on 23kV for power factor correction and study for specifications emission in ASO Siderurgica
El engineering Torino (TO)	2000	Measurements of electric fields at 1800MHz, EHF band (100kHz - 300 GHz). Analysis of electric fields measurements at the electric plant: Ferrero SpA

El engineering Torino (TO)	2000	Measurements of electric fields at 1800MHz, EHF band (100kHz - 300 GHz). Calculation of the SAR of mobile phone dect and their radiation. Analysis of electric field measurements at the radio plant: Ferrero SpA
AFV Vicenza (VI)	1999	AFV Beltrame (Vicenza). Measurements of power, voltage and current, harmonic emission and distortion. Analysis of measurements made on the electric lines MV and HV. Deep Test for Short circuit of the EAF furnace.
AFV Vicenza (VI)	1999	AFV Beltrame (Vicenza). Spectrum measurements of voltage and current of 125MVA 33kV EAF furnace .
El engineering Torino (TO)	1999	Thermographic measurements in the electric plant: Sinac (Batteries Industrial Company); EXIDE Europe (Romano di Lombardia BG) on 9-10 February 1999
FASSA Spresiano (TV)	1999	FASSA Ltd. (Spresiano TV). Measurements of electric field in the UHF band (500kHz-3GHz). Analysis of the measures in the areas of electric field '304, 306, 899 'of land cadastral maps. Private Residence, Executive Offices.
AFV Vicenza (VI)	1999	AFV Beltrame (Vicenza). Measurements of Flicker Voltage 220kV. Analysis of measurements made on the 220kV electric line in HV of power supplier ENEL.
SIOT Trieste (TS)	1999	Thermographic measurements in Stab. of: SIOT (Eng Soc. Transalpine Pipeline for SpA) TAL (Transalpine Pipeline) (San Dorligo Valley TS) May 4, 1999
Acciaierie Stefana Ospitaletto BS	1999	Thermographic mesurements on electric and EAF arc furnace in the Steelmaking plant of: STEEL STEFANA SpA (BS Ospitaletto) June 2, 1999
RIVA Acciaio Stab. Verona (VR)	1999	verification and measures for harmonic adsorption by 3rd tuned filter in RIVA Stainless Steel - STEEL Galtarossa SpA (Verona VR)
Ferriere Nord Osoppo UD	1999	Thermographic measurements in the electric plant: Ferriere Nord SpA (Osoppo UD)
Palini & Bertoli S.Giorgio Nogaro (UD)	1999	Thermographic measurements in the electric plant Palin & Bertoli SpA (San Giorgio di Nogaro UD)
IRO Odolo (BS)	1999	Thermographic measurements in the electric plant IRO SpA (Odolo BS)
BASF Italia Cesano Maderno (MI)	1999	Thermographic measurements in the electric plant of BASF Italy SpA (Cesano Maderno MI)
LUCCHINI Siderurgica: Acciaierie e Ferriere di Piombino Piombino (LI)	1999	Thermographic measurements in the electric plant Lucchini Steel: Steel and Ferriere Piombino Piombino (LI)
TECHINT Castellanza (VA)	1999	Studies and simulations for RC filters design and project: SIDOR (Venezuela)
ASO Siderurgica Ospitaletto (BS)	1999	Study of power factor correction harmonics tuned filters
Acciaierie Venete Camin (PD)	1999	grounding Expansion of land in the ground mesh plant: steelworks Veneto SpA (Camin PD)
Acciaierie Venete Camin (PD)	1999	Thermographic measurements in the electric plant: steelworks Veneto SpA (Camin PD)
Ferriere Nord Osoppo (UD)	1998	Ferriere Nord (Osoppo UD): Measurements of power, voltage and current harmonics emission, flicker. Analysis of the electrical components of the electric arc furnace with Saturable reactor..
Acciaierie VeneteCamin (PD)	1998	Venetian Steelworks (Camin PD): Thermographic measurements in the electric plant,
Ferriere NordOsoppo (UD)	1998	Ferriere Nord (Osoppo UD): Thermographic measurements in the electric plant,
IROOdolo (BS)	1998	IRO (Odolo BS): Check the power factor correction currently in service with the design and project of new power factor harmonics Filters, for the EAF furnace.
SIMACTarcento (UD)	1998	U.G.S.M.C.L. (Saudi Arabia): Calculation and designing of reactive power compensator for Rolling Mill with the tuned harmonics filters. Technical specifications and data sheets emissions. Measurements on the reactive power compensation equipment filters.
SIMAC Tarcento (UD)	1998	U.G.S.M.C.L. (Saudi Arabia): Details on: Calculation and designing of Rolling Mill reactive power compensator with the tuned harmonics filters. Technical specifications and data sheets emissions.
SIMAR Marghera (VE)	1998	Evaluation of Bids for the equipment for the rolling mill and continuous casting for zinc and copper
ASM Brescia (BS)	1997	Work Plan for the study and development of the High and Medium Voltage electric network.
Energeo Reggio Emilia (RE)	1997	technical and commercial specifications for a fault current limiters FCL.
Simac Tarcento (UD)	1997	Malayawata Steel (Malaysia). Analysis and evaluation of the electrical system of the Rolling mill for inserting a harmonic filter to reduce the voltage harmonic distortion on the MV busbar to 11 [kV].
Fincantieri Marghera (VE)	1997	Fincantieri (Marghera, Venice): Technical analysis of 50/60 Hz converters groups up to 4x700kVA. Measurements and Analysis of parallel operations of converters.

Dates	<b>February 1988 a February 1997</b>	
Occupation or position held	<b>Consultant for electrical measurements, software and research &amp; development for Electric Arc Furnaces, Saturable Reactor, support to steelmaking plants or Rolling Mills start-up in the electrical area.</b>	
Main activities and responsibilities	<b>Research &amp; Development for electrical machines in Steel making plant, Starting plants, Check and Measurements, Technical support to the Commercial and Business Area</b>	
Name and address of employer	<b>DANIELI &amp; C. , Via Nazionale, Buttrio Udine Italy</b>	
Type of business or sector	<b>Mechanical Steelmaking plant erection</b>	
Danieli&CButtrio (UD)	1996	Union Metal (Thailand). Simulation of electric transient for zero sequence current transformer on the neutral network connection to the ground with a resistance of 250 [ohm] and through the cables.
Danieli&CButtrio (UD)	1996	Huta Warsaw (POLAND). Simulation of electric transient for zero sequence current transformer on the neutral network connection to the ground with a resistance of 30 [ohm] and through the cables.
Danieli&C Buttrio (UD)	1996	Huta Warsaw (POLAND). Simulation of electric transient zero sequence current transformer on the neutral network connection to the ground with a resistance of 30 [ohm] and through the cables. Three-phase and two-phase grounding transformer short circuit.
Danieli&C Buttrio (UD)	1996	Ferriere Nord (Osoppo UD). Measures and their analysis: Flicker, Power on EAF Furnace, internal voltages to Saturable Reactor, MV voltages to ground of the busbar.
Danieli&C Buttrio (UD)	1996	A.d.A. (Bayonne, France). Simulation of electric transient currents and voltages to ground, differential voltage curve with magnetic saturation of the saturable reactor.
Danieli&CButtrio (UD)	1996	Description of the software programs on the EAF arc furnaces, MOD0032 with SVC
Danieli&C Buttrio (UD)	1996	Ferriere Nord (Osoppo UD). Waveforms of voltages and currents for arc compensated with saturable reactors.
Concast Systems Moimacco (UD)	1996	Shiu Wing (CHINA). Study of electrical disturbances on the electric network in respect of EMC limits.
Danieli&C Buttrio (UD)	1996	A.d.A. (Bayonne, France). Simulation of electric transient currents and voltages to ground, differential voltages with magnetic saturation curve with a new saturable reactor, RC overvoltage filters upstream and downstream of the Saturable reactor.
Concast SystemsMoimacco (UD)	1996	Planning and study of DC direct current EAF electric arc furnaces.
Danieli&CButtrio (UD)	1996	Electric arc furnaces. Literature search for R&D.
Danieli&C Buttrio (UD)	1996	A.d.A. (Bayonne, France). Simulation of electric transient currents and voltages to ground, with differential voltages with magnetic saturation curve of the real saturable reactor by 120MVA.
Danieli&C Buttrio (UD)	1996	Kdyn. Simulations to verify the dynamic coefficient of electric direct arc furnace.
Danieli&C Buttrio (UD)	1996	Kdyn. Load Flow Calculations and simulations of the mast of a harmonic emission electric direct arc furnace
Danieli&C. Buttrio (UD)	1995	Aciaierie S. Saulve (Vallourec FRANCE). Analysis measures of power on EAF furnace.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Statistical analysis of the distribution function of the harmonic currents of the EAF furnace at 22kV with saturable reactors.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Distribution function of Pst with and without saturable reactor. Graphs for the sales department with correction of + / - 10%.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Distribution function of Pst with and without saturable reactor. AF-03a/95 original values of the relationship.
Danieli&C. Buttrio (UD)	1995	Steelworks Megara (CT). Study for the Reduction of Flicker with a saturable reactor and a power factor correction with tuned Filtered.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Statistical analysis of the distribution function of the harmonic voltage 230kV with saturable reactors.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Statistics of the secondary transformer of voltage of the EAF Furnace with Memobox602.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Analysis of Pst (10 ') with and without saturable reactor, and with and without the ABS steelmaking plant system in operation, with different melting profiles.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Analysis of the waveforms of voltages and currents, the secondary of the EAF furnace transformer with digital capture.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Spectrum analysis of the voltages between the two star points O-O ' branch of the EAF furnace transformer.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Analysis of spectrum and integral of the current flowing through the RC overvoltage filter upstream and downstream of the saturable reactor.
Danieli&C. Buttrio (UD)	1995	A.d.A. (Bayonne, France). Simulations of the electric transient on zero sequence current transformer in connection with MV Zy11 grounding transformer.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Transient simulations of voltage, current on saturable reactor without magnetic hysteresis.
Danieli&C. Buttrio (UD)	1995	Ferriere Nord (Osoppo UD). Transient simulations of voltage, current with saturable reactor with magnetic hysteresis.
Danieli&C. Buttrio (UD)	1994	Aceros S.L. (Mexico): Notes on the measures and inspections in local plant
Danieli&C. Buttrio (UD)	1994	Aceros S.L. (Mexico): Measurements and calculation of power factor correction
Danieli&C. Buttrio (UD)	1994	ABS (UD): Measurement of short circuit deep test on EAF/LF furnaces
El engineering (TO)	1994	Profilati Nave steelmaking plant (BS): Measurement of flicker, Short Circuit deep test, and voltage THD

Danieli&C.Buttrio (UD)	1994	ABS (UD): Curves work Circle diagrams for LF furnace
Danieli&C.Buttrio (UD)	1994	Description of software programs on EAF-LF furnaces parameters calculations
Danieli&C.Buttrio (UD)	1994	Aceros S.L. (Mexico): Measurement of Electric Power and Pst on 230 kV
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Hioki 3165 Power Measurements from 30/08/93 to 08/09/93
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Hioki 3165 Power Measurements from 03/11/93 to 09/11/93
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Measures PQ, PQ (T) and the Hi3191 10/03/94
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Measures PQ, VI arc voltage waveforms on 08/12/94
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Measures V and The Dranetz 656 21kV and harmonics
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Harmonic Analysis with Distribution Function.
Danieli&C.Buttrio (UD)	1994	Smorgon Steel (AUS): Measure Short circuit currents on high voltage, Pst, P.Q THD
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Harmonic Analysis with the Saturable reactor.
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD). Harmonic analysis without the Saturable reactor
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Analysis of Pst in HV with Saturable reactor
Danieli&C.Buttrio (UD)	1994	Ferriere Nord (UD): Analysis of Pst and Plt with and without Saturable reactor
Danieli&C.Buttrio (UD)	1994	Imatra Steel (Finland): electric plant Comparison with Ferriere nord (UD)
Danieli&C.Buttrio (UD)	1993	Aceros DM (Mexico): Considerations on Harmonics emission
El engineering (TO)	1993	Ferrero steelworks Bruzolo: Measurements of Flicker and THD in high voltage
Danieli&C.Buttrio (UD)	1993	Megas (Spain): Study to improve the electric system for revamping
Danieli&C.Buttrio (UD)	1993	Ferriere Nord (UD): Measurements of power and flicker voltage
Danieli&C.Buttrio (UD)	1993	Stefana steelmaking plant (BS): Currents Harmonic Analysis with the V-store instrument
Danieli&C.Buttrio (UD)	1993	Hadeed (Saudi): Measurements on the Rolling mill power factor correction for certification
Danieli&C.Buttrio (UD)	1993	Orbezogo Esteban (Spain): working Curves circle diagram with Mod 00:21 software
Danieli&C.Buttrio (UD)	1993	ABS plant (UD): Measurements of high voltage network short circuit
Danieli&C.Buttrio (UD)	1993	Equipment purchased and supplied for electric measurement on steelmaking plants
Danieli&C.Buttrio (UD)	1993	ABS (UD): Measurements of power and flicker voltage
Danieli&C.Buttrio (UD)	1993	DDS steelmaking plant (Denmark): Measurements of power and flicker voltage
Danieli&C.Buttrio (UD)	1993	Measurements Instrumentation, analyzers, and power harmonics specification
Danieli&C.Buttrio (UD)	1993	Ferriere Nord (UD): measures on LF furnace
Danieli&C.Buttrio (UD)	1993	Ferriere Nord (UD): Pst measures, time graphs, waveforms with series reactors, powers P and Q
Danieli&C.Buttrio (UD)	1992	Megas steelmaking plant (Ferrol, Spain): Study and design project for expansion and revamping
Danieli&C.Buttrio (UD)	1992	Rico y E. (Spain): Study to reduce EAF flicker emission on high voltage
Danieli&C.Buttrio (UD)	1992	Talleres y Aceros (Mexico): Evaluation of Pst and harmonics emission
El engineering (TO)	1992	FAS (CA): Analysis, Measurement from 28/02/92 to 03/03/92 Harmonics, Pst voltage
Danieli&C.Buttrio (UD)	1992	Aceros DM (Mexico): Disturbances measurements, Pst, harmonics, power factor □
Danieli&C.Buttrio (UD)	1992	Aceros DM (Mexico): Disturbances measurements, Pst, harmonics, power factor after revamping □
AFV (VI)	1992	Failure of SVC static var compensator; 2nd and 3rd harmonics filters and thyristors controlled reactor and its solutions
AFV (VI)	1992	Check TCR reactors and filters for power factor correction
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Measures of Pst (MV) 30 kv from 12/05/92 to 14/05/92
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Measures PQV Hioki-3191-EAF-(MV) from 12/05/92
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Measures PQV Hioki-8820-EAF-(MV) from 12/05/92
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Measurements VI WRS from B9 (MV), from 12/05/92 Harmonics
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Measures of Poincare section from 12/05/92 FP Vr
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): Measures of Pst (MV) 21 kv from 10/06/92 to 16/06/92
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): Measures 3191 Hioki PQV EAF (MV) from 10/06/92 to 16/06/92
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): Measures 8820 Hioki PQV EAF (MV) from 10/06/92 to 16/06/92
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): V Box Store
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): Poincare sections of P-Q-Er
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): Measures of Pst 21 kv from 16/06/92 to 19/06/92
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): Measures PQV Hioki 3191 from 16/06/92
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): Measures PQV Hioki 8820 from 16/06/92
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): V Box Store
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): Poincare sections of Er-FP
Distercoop	1992	Verification and correction of drawings of EMS
Danieli&C.Buttrio (UD)	1992	Stefana steelmaking plant (BS): Analysis Measurements AF / 8 ° -e/92
Danieli&C.Buttrio (UD)	1992	ABS steelmaking plant (UD): Analysis Measurements AF / 9 ° -e/92
Danieli&C.Buttrio (UD)	1992	Ferriere Nord steelmaking plant (UD): Measures Analysis f/10 ° -e/92
Danieli&C.Buttrio (UD)	1992	Thy-Marcinelle steelmaking plant (Belgium): Measures Analysis
Danieli&C.Buttrio (UD)	1992	Acenor steelmaking plant (Spain): Analysis of measures failed Trafo
Danieli&C.Buttrio (UD)	1992	Acenor steelmaking plant (Spain): Measures
Danieli&C.Buttrio (UD)	1992	Hadeed steelmaking plant (Saudi): Measures to be carried
Danieli&C.Buttrio (UD)	1992	Thy Marcinelle steelmaking plant (Belgium): Analysis of Pst (CPF)
Danieli&C. Buttrio (UD)	1991	Steelworks Megara (Catania CT): Study with the new 40MVA transformer.
Danieli&C.Buttrio (UD)	1991	Nassr steelmaking plant (IRAN): Edit Relationship AF-23a/90
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): Measurements from 12/06/90 Pst 130kV
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): measurement from 12/06/90 TrFo1
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): measurement from 12/06/90 130kV FO1
Danieli&C. Buttrio (UD)	1991	Alpha Steel (Brescia BS): Calculations of the Powers and C.to C.to FO1 phase 16,18,21 TAP
Danieli&C. Buttrio (UD)	1991	Megasa steelmaking plant (Ferrol Spain): new connection from 80MVA TrFo
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): from 12/06/90 to 14/06/90 oscillograms Hioki8820
Danieli&C. Buttrio (UD)	1991	Alpha Steel steelmaking plant (Brescia BS): Influence of the series reactor on the Pst
Danieli&C. Buttrio (UD)	1991	Zaporozvie steelmaking plant (USSR): Study for the electrical connection
Danieli&C. Buttrio (UD)	1991	ABS (UD): Considerations on the flicker

Danieli&C. Buttrio (UD)	1991	Megara steelmaking plant (CT): Powers and Measures Pst form 25 MVA
El. engineering service Torino (TO)	1991	Ferrero steelworks (Bruzolo TO): Measures the Pst 130kV produced by furnace, with and without SVC from 48Mvar.
El. engineering serviceTorino	1991	Direct Deposit Test relays.
Danieli&C.Buttrio (UD)	1991	Megasa steelmaking plant (Ferrol, Spain): Measurements of power, flicker and harmonics in the system
El. engineering service Torino (TO)	1991	FAS steelmaking plant (Cagliari CA): Analysis of Measures flicker and harmonics produced by the electric arc furnace.
Danieli&C.Buttrio (UD)	1991	Hadeed steelmaking plant (Saudi Arabia): Measurements and filters mill. Measurements and analysis
Danieli&C.Buttrio (UD)	1991	Hadeed steelmaking plant Report for Danieli Engineering
Danieli&C. Buttrio (UD)	1991	Megasa steelmaking plant (Ferrol, Spain): Study and measures
Danieli&C. Buttrio (UD)	1991	Insig Ahwaz steelmaking plant (Iran): final report facility
Danieli&C. Buttrio (UD)	1991	Megasa steelmaking plant (Ferrol, Spain): Responses fax 7/11/91
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): measurement from 15/11/90 to 16/11/90 130kV FO1
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): Measurements from 15/11/90 to 16/11/90 Pst 130kV
Danieli&C. Buttrio (UD)	1991	Alpha steelmaking plant (Brescia BS): Oscillogram from 15/11/90 to 16/11/90 Hioki 8820
Danieli&C. Buttrio (UD)	1991	Steelworks Megara (Catania CT): Power measurements in the XY plane and FFT signal.
El. engineering service	1990	New Samin (Moncalieri TO): Calculation and verification of a new power factor correction, filter sizing and project and verification of electrical parameters of the system.
Torino (TO) Italy		
El. engineering service Torino (TO)	1990	Ferrero steelworks (Settimo Torinese TO): Transient insertion of the transformer forno2.
El. engineering serviceTorino	1990	Pirinoli mill (CN CN): Measurements of electromagnetic compatibility.
Danieli&C. Buttrio (UD)	1990	Ashtar (Bashra IRAQ): Calculation of the disturbance on the 400 kV network with an output short circuit 3890MVA.
Acciaieria Megara Catania (CT)	1990	Parameterization of the current operation of the steelworks Megara.
Danieli&C. Buttrio (UD)	1990	Ashtar steelmaking plant (Bashra IRAQ): introduction of a data collect and analysis of the EAF furnace filters.
Danieli&C. Buttrio (UD)	1990	List of measurements tools to buy.
El. engineering service Torino (TO)	1990	Ferrero steelworks (Settimo Torinese TO): oscillograms of voltage and current on 130kV.
El. engineering service	1990	Ferrero steelworks (Settimo Torinese TO): Measurement of short circuit 130kV power, harmonic current generation in parrallelo with Lucchini.
Torino (TO)		
Danieli&C. Buttrio (UD)	1990	Alpha Steel (Brescia BS): 18/11/89 Archive oscillograms.
Danieli&C. Buttrio (UD)	1990	Marienhütte steelmaking plant (Graz AUSTRIA): Measurements and parameterization of the system.
Danieli&C. Buttrio (UD)	1990	Ashtar steelmaking plant (Bashra IRAQ): Disorder produced by furnaces with existing projects ASTAR89-90,
Danieli&C. Buttrio (UD)	1990	DeAcero steelmaking plant (Saltillo MEXICO): Measurements and parameterization of the plant for its future changes.
El. engineering serviceTorino	1990	Cavis (Felixstowe AL): Analysis of harmonic currents in the system.
Danieli&C. Buttrio (UD)	1990	Zoshaco steelmaking plant (IRAN): Characterization of the future plant.
Danieli&C. Buttrio (UD)	1990	Nassr steelmaking plant (Tehran-IRAN Ahuaz): Melting and Casting Plant of INSIG-IRAN.
Danieli&C. Buttrio (UD)	1990	PRG-1a/90: Formulas for calculating the MOD05.0.
El. engineering serviceTorino	1990	Ferdofin steelmaking plant (St. Zeno BS): Inspection and measurements 06/11/90.
El. engineering serviceTorino	1990	Mill CCC (MC Tolentino): Survey Measures and Analysis.
Danieli&C. Buttrio (UD)	1990	Alpha steelmaking plant (Brescia BS): Measurement of short circuit of the oven EAF1.
Danieli&C. Buttrio (UD)	1990	Alpha steelmaking plant (Brescia BS): Preliminary analysis of the reactor furnace.
Danieli&C. Buttrio (UD)	1990	Nassr steelmaking plant (Tehran-IRAN Ahuaz) reparameterized the system.
Danieli&C. Buttrio (UD)	1990	ABS steelmaking plant Safau Bertoli (Carnacco UD): Commissioning of 55MVA furnace.
Danieli&C. Buttrio (UD)	1990	Complete system of relaying protection of a EAF/LF furnace branch, with a fixed power factor correction tuned filters on 3rd and 4th harmonic.

Dates	<b>1984 – gennaio 1988</b>
Occupation or position held	<b>Consultant</b>
Main activities and responsibilities	<b>Electrical measurements, study and projects</b>
Name and address of employer	<b>El. engineering service srl Torino (TO) Italy</b>
Type of business or sector	<b>civil and industrial Engineering Services</b>
Name and address of employer	- ASM Azienda Servizi Municipalizzati di Brescia, - AIM Azienda Servizi Municipalizzati di Vicenza; - EDISON Energia SpA Milano (MI) - 'El. Engineering Service srl' Studio d'ingegneria di Torino, - DANIELI&C. Officine Meccaniche SpA Udine; - TENOVA SpA - Techint Milano - TECHINT Milano (MI) - CONCAST Systems SpA Udine; - SMS SIMAC SpA Officine Meccaniche - SMS Demag Udine;
Name and address of employer In Italy	Acciaieria Ferriere del Tanaro (CN) CESI (Italian Electrical Experimental Centre) Acciaierie Bertoli Safau Pozzuolo del Friuli (UD) Acciaierie Ferrero San Didero Bruzolo (TO) Acciaierie Ferrero Settimo Torinese (TO) Acciaierie Ferriere Vicentine Beltrame Vicenza (VI) Acciaierie della Sicilia Catania (CT) Acciaierie Stefana (BS) Acciaierie Venete (PD) AFV Acciaierie Vicentine Beltrame di Vicenza, dal 1986; Alfa Acciai San Polo (BS) BELLELI Mantova (MN) DUFERCO Group – Acciaierie bresciane San Zeno (BS) Ferriere Nord Gruppo Pittini Osoppo(UD) ASO Siderurgica Ospitaletto (BS) Ori Martin Brescia (BS) RIVA Acciaio Milano (MI) FERALPI group Lonato (BS) FINCANTIERI Marghera (VE) FERRERO Dolciaria Alba (CN), ILTE Moncalieri (TO) BUZZI UNICEM EDISON Energia Milano (MI) - SONDEL Sesto San Giovanni (MI)
Name and address of employer Out Italy	Hadeed (Al Jubail - Arabia Saudita) Smorgon Steel (Melbourne - Australia) MarienHutte (Graz - Austria) Thy-Marcinelle (Charleroi - Belgio) DDS (Frederiksvark - Danimarca) Imatra Steel (Finlandia) Acierie de l'Atlantique (Bayonne - Francia) Acierie de Saint Saulve (Vallourec - Francia) LME Trit Saint Legeire (Valensienes – Francia) Insig (Ahwaz - Iran) Insig (Teheran - Iran) Ashtar (Bagdad - Iraq) Ashtar (Bassora - Iraq) DeAcero (Saltillo - Messico) Aceros DM (San Louis Potosi - Messico) Aceros SL (San Louis Potosi - Messico) Talleres y Aceros (Messico) Acenor (Bilbao - Spagna) Aceros Rico y E. (Saragoza - Spagna) Megasa (La Coruna - Spagna) Union Metal (Tailandia) Perwaja Steel (Kijal Malaysia) Malayawata Steel (Malaysia)

## TEACHING IN COURSES

Seminar on electromagnetic fields in the order of Engineers-Architects Education courses on the theory of electric arc furnaces Education courses on Applied Thermography Education on Measurements and electric installations in industrial plants
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### Education and training

Dates	<b>1996</b>
Title of qualification awarded	<b>PhDegree in Physics or Doctor of Physics</b>
Principal subjects/Occupational skills covered	<b>with a thesis on: "MATHEMATICAL MODEL OF A SYSTEM WITH ELECTRIC ARC AND ITS APPLICATION TO MELTING FURNACES FOR STEEL" Department of Physics and Electrical Engineering Department. Other matters studied: Theoretical Physics, Relativity, Statistical Mechanics, Electronics, Industrial Applied Physics, complex non-linear chaotic systems University of Padua Italy, Faculty of Physical and Natural Sciences, Department of Physics</b>
Name and type of organisation providing education and training	<b>3° level</b>
Level in national or international classification	
Dates	<b>From 1973 to 1978</b>
Title of qualification awarded	<b>Degree in Electrical Engineering and Industrial Technician Diploma</b>
Principal subjects/Occupational skills covered	<b>specialization in Electrical Engineering and Electrical Measurements</b>
Name and type of organisation providing education and training	<b>Technical Institute A. Pacinotti Mestre-Venice Italy</b>
Level in national or international classification	<b>2° level</b>
Dates	<b>2007</b>
Title of qualification awarded	<b>certificate</b>
Principal subjects/Occupational skills covered	<b>Seminar on: 'Control Design in industrial plant'</b>
Name and type of organisation providing education and training	<b>National Instruments Italy</b>
Level in national or international classification	<b>1° level</b>
Dates	<b>2004</b>
Title of qualification awarded	<b>Technician and qualified to perform the measurements of the electromagnetic field for the 1432/2002 DGRV in the manner prescribed by DGRV 3617/2003</b>
Principal subjects/Occupational skills covered	<b>Course for Technical ARPAV for EMC Fields: measurement protocol of electromagnetic fields at 50Hz up to 3GHz</b>
Name and type of organisation providing education and training	<b>Regional Agency for Environmental Protection Veneto, Verona</b>
Level in national or international classification	<b>1° level</b>
Dates	<b>1999</b>
Title of qualification awarded	<b>certificate</b>
Principal subjects/Occupational skills covered	<b>Seminar on Electromagnetic Fields</b>
Name and type of organisation providing education and training	<b>PMM electromechanical constructions, radio measures Centre Milan Italy</b>
Level in national or international classification	<b>1° level</b>

Dates	<b>1998</b>
Title of qualification awarded	<b>certificate</b>
Principal subjects/Occupational skills covered	<b>Course on Applied Thermography</b>
Name and type of organisation providing education and training	<b>FLIR Milan Italy</b>
Level in national or international classification	<b>1° level</b>
Dates	<b>1998</b>
Title of qualification awarded	<b>certificate</b>
Principal subjects/Occupational skills covered	<b>The acoustics for the land area: theory and practice for sound management in the territory</b>
Name and type of organisation providing education and training	<b>Bruel &amp; Kjaer Milan - Veneto ARPAV Italy</b>
Level in national or international classification	<b>1° level</b>
Dates	<b>1994</b>
Title of qualification awarded	<b>certificate</b>
Principal subjects/Occupational skills covered	<b>Course on: The electromagnetic compatibility in electrical systems users, Technical design of protection systems and desensitization.</b>
Name and type of organisation providing education and training	<b>Italian Association of Electrical and Electronics (AEI Section of Venice, Padua), Department of Electrical Engineering - University of Padua Italy</b>
Level in national or international classification	<b>1° level</b>

### **Personal skills and competences**

I regularly practiced the following sports: rock climbing up to 6b+ and ice also as team leader, for example, have twice been on top of the Gran Paradiso in the summer and winter on skis, on top of Monte Rosa and Mont Blanc, in Alpi Mountains; without count the many mountain peaks over 3000m in Dolomities.

I like the Indoor Climbing until 7a and in Falesia, and i like so trace the new paths, I did the instructor at the CAI, Alpine Skiing, Hiking and trekking.

Lately I'm interested also Sailboats for pleasure also by participating in regattas.

I love traveling, I did it primarily for work, which gave me the opportunity to visit places and have contacts with people around the world, that otherwise I would have been difficult to do alone me.

I read a lot, especially scientific papers in physics, scientific journals, but sometimes I also like especially reading science

**Mother tongue** Italian

**Other language** English

**Reading skills** Good

**Writing skills** Medium

**Listening-Spoken skills** Poor

**Self-assessment**

*European level (\*)*

English Language

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
A1	B2	A1	A2	B1

*(\*) Common European Framework of Reference (CEF) level*

**(i am going at school, for improve my english language)**

**Social skills and competences**

My work has given me the opportunity go to abroad, where I never had any problem to relate with the persons, above all at work. In fact sometimes the companies send me, because i have a good interpersonal relationship directed for complete the work or to obtain and collects data, necessary for the continuation of work and conclusion of open projects.

I organized groups of people, go out in the mountains and / or travel in Italy and abroad.

I have organized of the technical courses, and I presented some technical seminars.

I directed some group activities for Research & Technological Development, Theoretical and Practical Application, Data collections and Field in Measurements.

**Organisational skills and competences**

I can organize all types of jobs with the necessary logistics to their conduct. I've always managed the WEMES-Consulting.

I also participated at the Research & Development of Saturable Reactor for EAF furnaces.

I organized all the activities which may require the research and development towards new technology in many industrial fields, this ability comes to me from both my experience in years of personal applications in the industrial fields.

I like to improve and experiment with new forms of measurement, with all the instruments that i have at my disposal, also in very complex measurement systems.

**Technical skills and competences**

My consulting activities are to related to the following topics:

Measurements of conducted and radiated electromagnetic disturbances in electrical networks, for frequencies more low 300 GHz (CEI, IEC, IEEE, standards) Voltage flicker, harmonics and interharmonics in voltage and currents, electric transients, power measure in electric network systems, saving the electric energy consumption with Computational Load Flow, shortcircuit currents and Harmonics Flow of electrical loads in electrical networks.

Measurement of the secondary impedance in electric arc furnace at secondary side with a performed a deep test, the short circuit power in the High Voltage or Medium Voltage for power supplier system, mechanical vibration and noise. Measurement of arc voltage with compensation and digital filtering of the electrical circuit parameters.

I can use many types of instrumentation for analysis of power electrical networks

Apparatus for infrared thermography

Electromagnetic fields detectors, isotropic or triaxial

**Electrical Measurements**  
**Thermography**  
**Electromagnetic Fields**  
**Projects Planning with R&D:**

Feasibility, automation supervision with PLC/HMI, project planning and design in industrial electric system (with software simulations also customize in electric arc furnaces).

Simulations of the electrical circuit of the arc furnace with software programs for the analysis of electrical circuits with Saturable Reactor or fixed reactors, with SVC or series thyristor-controlled furnace, DC arc furnace optimized with rectifiers-converters.

Theoretical Calculation of various sizes of electric arc furnaces and analysis with their feedback measurements.

Calculation of power flow in electric networks, harmonic flow for the penetration of harmonics currents into the power grid, short-circuit currents in the network, transient stability in case of failures in the network, the coordination and setting of electrical plant protection, electrical disturbances.

Design, project, verification and testing: of harmonics filters for the compensation of reactive power, Series reactors at the arc furnace, static reactive power compensators SVC/STATCOM, synchronous condensers, and power transformers for furnaces and of step-down by power electrical supplier, power electrical generation.

Analysis of nonlinear systems (chaotic) and measures, with techniques such as: 'Spectral analysis and spectral density of nonlinear systems', 'Synchronization of chaotic systems'.

## **Computer skills and competences**

O.S. Windows 7<sup>th</sup> , XP, 98, 95, MS-DOS  
Networking with protocol TCP/IP  
Knowledge of this programming languages: 'C', 'FORTRAN'.  
Programming in Windows with FORTRAN, C, Visual Basic, Visual C++.

## **Operating Systems Used and Simulation software programs:**

Office for Windows: Word, Excel, etc..  
Outlook for e-mail  
Browser: Mozilla Firefox, Internet Explorer  
Programming the Web with FrontPage  
Messaging with SKYPE and MSN  
PSPICE (dynamic simulation for electromagnetic transients in electric circuits).  
ANSYS (FEM simulation linear and nonlinear, multiphysics static and dynamic for structures, electromagnetic, fluid dynamics, etc..).  
DIGSILENT, NEPLAN, software (load flow, harmonic penetration in the network; short-circuit currents, transient stability, protection coordination and setting, the calculation of disturbances on the network).

## **I make this kinds of software programs**

AUTOCAD  
Software for 'Analysis of Errors', 'Operative Research and Optimization', inserts in:  
Theoretical calculation of various sizes parameters on electric arc furnaces,  
Circle Diagram and analysis of measures, 'C' and 'FORTRAN' C #.  
Programs for control of measurement instrumentation with PLC and HMI for optimizing the electrical and metallurgical process monitoring in arc furnaces

## **Artistic skills and competences**

I like photography, which I use in all my activities, especially document my travels and outdoor trekking while doing sports in nature or in the visits to the cities of art and museums,, in mountain in all seasons, but also the sea in the Venetian lagoon when i go by boat to sail.

## **Other skills and competences**

For the practice of my hobbies and sports activities, I developed a capacity of preparation, concentration, analysis of the immediate and long-term situations, as well as resolution of problems that may arise, making decisions better and faster depending on the case situation.

## **Driving licence**

I hold a driving licence for heavy vehicles **cat. C (Italian)**

## **Additional information**

I am registered on Industrial Electrical Engineers Graduates of Venice-Italy from 1981 with the No. 1728  
I have done the military service in 1985-86 attending the Alpine Military School of Aosta, after in the Alpine Brigade Julia in farce to Gemona Battalion in Tarvisio with the rank of Lieutenant Commander of the Alpine Highlanders platoon  
I am registered to CAI Italian Alpine Club since 1976

## **PUBBLICATIONS**

Article on Aiet journals Italian Association for Electrical Engineers and it will be translated for the PES conference, Power Energy Society / IEEE, San Diego CA, forthcoming

**“The state of the art in electric arc furnace for steel use and their disturbances compensation”**

A. Fragiaco<sup>1</sup>, L.Lusetti<sup>2</sup>, G.Mazzanti<sup>2</sup>

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Seminar on Electromagnetics Fields

## **Annexes**

Mestre-Venice , 16 October 2011

Alberto Fragiaco