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University Academic Curriculum Vitae

Personal information

Franco Concli
Italian
franco.concli@unibz.it

Education since leaving school

- 2007 Bachelor in Mechanical Engineering; Politecnico di Milano
- 2009 Master in Mechanical Engineering; Politecnico di Milano
- 2013 European Ph.D. in in Mechanical Engineering; Politecnico di Milano (6 months @ TUM)

- 2010 National Professional Practice Exam – Industrial Engineering
- 2017 National Scientific Habilitation (ASN) – Associate Professor – Competitive Sector 09/A3 - ING-IND/14

Present appointment

- Associate Professor ING-IND/14 (PA)
- October 2022 so far
- Research Institute: Free University of Bolzano/Bozen, Faculty of Science and Technology

Professional experience

From / to	Job title	Name of Institution	Responsibilities
2019-2022	Senior Assistant Professor ING-IND/14 (RTD-B)	Free University of Bolzano/Bozen, Faculty of Science and Technology	Research and didactic
2017-2019	Junior Assistant Professor ING-IND/14 (RTD-A)	Free University of Bolzano/Bozen, Faculty of Science and Technology	Research and didactic
2017	Research collaboration	Politecnico di Milano	Project: "*Analisi delle prestazioni di valvole per pompe per jet grouting*" Funded by: "*Cima S.p.A. Metax Division"*
2017	Occasional collaboration	Exemplar Srl	Project: "*Automazione numerica dell'analisi di dischi frizione a bagno d'olio*"
2014-2016	R&D Senior Engineer	Bonfiglioli Mechatronic Research	In charge of the LP6 Research Project (ING-IND/14 WP): "*Ricerca su sistemi meccatronici ad alta efficienza (riduttori ad ingranaggi, motore elettrico e azionamento elettronico) per applicazioni industriali*" Funded by: *Provincia Autonoma di Trento* In charge of the Research Project: "*Sviluppo di materiali a base carbonio resistenti all'usura per l'applicazione a elementi di riduzione meccanica*" In cooperation with: *Fondazione Bruno Kessler (TN)* In charge of the Research Project: "*Characterization of a new austempered ductile iron*" In cooperation with: *Politecnico di Milano (MI)*
2013	Member of the Research Team	Politecnico di Milano	Research Project: "*Concentrating solar power – Verification and new design of the actuation system*" Research Project financed by: *ENI* In collaboration with: *MIT*
2013	Post-Doc Research Fellow	Politecnico di Milano	Research Fellow: "*Sistemi di mitigazione meccanica dei fenomeni di bunkering*"

			Funded by: *ENI*
2009-2013	Member of the Research Team	Politecnico di Milano, Galbiati, Flamespray, D'Appolonia, Colmegna	Research Project: "*XL-Gear: Fatigue tests on materials and treatments for large gears for wind turbines and data analysis*" Funded by: *Regione Lombardia*
2009-2013	Member of the Research Team	Politecnico di Milano	Research Project: "*Gear Tooth Bending Fatigue Characterization of Helicopter Transmission: Effect of Material and Manufacturing Parameters on Nitrided Gears*" Funded by: *Agusta Westland (now Leonardo)*
2009-2013	Member of the Research Team	Politecnico di Milano	Research Project: "*Gear Tooth Bending Fatigue Characterization of Helicopter Transmission: Effect of Design and Manufacturing Parameters and Megacycle Fatigue – Case Hardened Carburized Gears*" Funded by: *Agusta Westland (now Leonardo)*
2012	Gastwissenschaftler – Guest researcher	FZG (Forschungsstelle für Zahnräder und Getriebebau) – TUM München (D)	Research Project: "*Development of new calculation methods for efficiency and thermal behavior predictions in gearboxes*"
2012	Member of the Research Team	Politecnico di Milano	Research Project: "*Gearmotor JN-010312 Lifetime calculation for Artis Blood Pump Motor Dynamic behavior of a gear-motor for medical applications: development of the DOE (design of experiments) and validation*" Funded by: *Gambro, Sonceboz*
2011	Member of the Research Team	Politecnico di Milano	Research Project: "*EUREKA WASHERS Bearing lifetime calculation and testing*" Funded by: *Bauknecht Whirlpool*
2011	Occasional collaboration	Politecnico di Milano	Research project: "*Gear material characterization tests*"
2011	Occasional collaboration	Tecmet2000 S.r.l.	Project: "*Realizzazione fascicoli tecnici apparecchiature per la preparazione di campioni metallografici*"
2010	Member of the Research Team	Politecnico di Milano	Research Project: "*High Precision planetary gearboxes*" Funded by: *TecnoIngranaggi*

Participation in exhibitions

ISIEA 2023, Bolzano/Bozen, Italy
Presented paper: 2022 *Concli Franco* A FEM-based Study on the Impact of the Shot Peening Process on the Fatigue Performances of Mechanical Components, Conference Proceedings

International Conference on Gears 2023, Munich, Germany
Presented paper: 2022 *Concli Franco*, Mastrone M.N. Latest advancements in the lubrication simulations of geared systems: a technology ready for industrial applications, Conference Proceedings

Fachtagung Gleit- und Wälzlager 2023, Germany
Presented paper: 2023 Maccioni L., *Concli Franco*., Gorla, C., Flows in oil-bath lubricated tapered roller bearings: cfd simulations validated via PIV, Conference Proceedings

TU Kaiserslautern University 26/11/2022, Efficiency and lubrication of mechanical components **KEYNOTE SPEAKER**

International Conference on Gears 2022, Munich, Germany
Presented paper: 2022 Rao, P.M., Foletti, S., Bonaiti, L., *Franco Concli*, Gorla, C., Beretta, S., *Mode III threshold under Rolling Contact Fatigue and development of a test gearbox for planet gears: Conference Proceedings*

International Conference on Gears 2022, Munich, Germany
Presented paper: 2022 Bonaiti, L., Rosa, F., Rao, P.M., *Concli Franco*., Gorla, C., Gear root bending strength: statistical treatment of Single Tooth Bending Fatigue tests results: Conference Proceedings | [Zahnfußbiegefestigkeit: Statistische Behandlung der Ergebnisse von den STBF-Versuchen]: *Conference Proceedings*

Aachen University 24/11/2021, High and low-cycle-fatigue properties of 17–4 PH manufactured via selective laser melting in as-built, machined and hipped conditions **KEYNOTE SPEAKER**

WMMES2021, Prague, Czech Republic **MEMBER OF THE TECHNICAL COMMITTEE and CHAIRMAN**
Presented paper: 2021 Cristian Cappellini, Franco Concli, FEM Modeling of Tool Wear in Hard Turning Operations, WMMES2021, Prague, Czech Republic ***BEST PAPER AWARD***

WMMES2021, Prague, Czech Republic **MEMBER OF THE TECHNICAL COMMITTEE and CHAIRMAN**
Presented paper: 2021 Lorenzo Fraccaroli, *Franco Concli*, 17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties, WMMES2021, Prague, Czech Republic

WMMES2021, Prague, Czech Republic **MEMBER OF THE TECHNICAL COMMITTEE and CHAIRMAN**
Presented paper: 2021 Lorenzo Fraccaroli, Franco Concli, 17-4 PH SS Manufactured via Selective Laser Melting: High-Cycle-Fatigue Properties, WMMES2021, Prague, Czech Republic

CMEM 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Ronant Monteiro De Paula, Renato Vidoni, Franco Concli, *Vibrational analysis of a back-to-back test rig: a lumped parameter approach tuned via Finite Element Analyses*, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK ***SELECTED PAPER***

AFM/MPF 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Mastrone Marco Nicola, Franco Concli, *Simulation of fluid's aeration: Implementation of a numerical model in an opensource environment*, AFM/MPF (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

Material Characterization 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Fraccaroli Lorenzo, Franco Concli, *Characterization of Composite Materials via DIC and Structural modelling of multilayer skis with an open source FEM software*, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

BEM/MRM 2021, Virtual
Presented paper: Marco N Mastrone, Franco Concli, Development of a mesh clustering algorithm aimed to reduce the mesh usage and the computational effort of gearboxes' simulations, BEM/MRM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

CMEM 2021, Virtual **INVITED (KEYNOTE) SPEAKER & MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: Franco Concli, Margherita Molinaro, Eleonora Rampazzo, Design for additive manufacturing, is it an effective alternative? – part 1: material characterization and geometrical optimization, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

CMEM 2021, Virtual **INVITED (KEYNOTE) SPEAKER & MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Franco Concli, Margherita Molinaro, Eleonora Rampazzo, Design for additive manufacturing, is it an effective alternative? – part 2: cost evaluation, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

CMEM 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Franco Concli, Maccioni Lorenzo, Bonaiti Luca, Reliable gear design: by translating translation of the results of single tooth bending fatigue tests through the combination of numerical simulations and fatigue criteria, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

Material Characterization 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Franco Concli, Lorenzo Maccioni, Critical planes criteria applied to gear teeth: which one is the most appropriate to characterize crack propagation?, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

Material Characterization 2021, Virtual **MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2021 Franco Concli, Lorenzo Fraccaroli, Bending fatigue strength of small size 2 mm module gears, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

vAIAS 2020, Italy
Presented paper: 2020 Franco Concli, *Lubrication Simulations of Roller Bearings: the most effective approach*

vAIAS 2020, Italy
Presented paper: 2020 Lorenzo Maccioni, Marco N. Mastrone, Franco Concli, *Computational studies on cycloidal gearboxes: a systematic literature review*

vAIAS 2020, Italy
Presented paper: 2020 Lorenzo Fraccaroli, Franco Concli, *Structural modelling of multilayer skis with an open source FEM software*

vAIAS 2020, Italy
Presented paper: 2020 Zaki Alomar, Franco Concli, *A Review of The SLM Lattice Structures Numerical Models*

vAIAS 2020, Italy
Presented paper: 2020 Marco N. Mastrone Franco Concli, *Churning Power Losses of Spiral Bevel Gears: An Analysis based on Computational Fluid Dynamics*

WMMET 2020, Prague, Czech Republic
Presented paper: 2020 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: High-Cycle-Fatigue Properties*

WMMET 2020, Prague, Czech Republic
Presented paper: 2020 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties*

AFM 2020, Prague, Czech Republic **INVITED (KEYNOTE) SPEAKER & MEMBER OF THE INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE**
Presented paper: 2020 Franco Concli, Equilibrium of a journal bearing: a simplified CFD-analytical coupled approach, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

UT 2020, Bilbao, Spain
Presented paper: 2020 Nezzi Chiara, Franco Concli, *Hybrid Transmissions for the Optimization of the Efficiency of Internal Combustion Engines* ***SELECTED PAPER***

ICMMT 2020, Bangkok, Thailand **MEMBER OF THE TECHNICAL COMITTEE**
Presented paper: 2020 Lorenzo Maccioni, Eleonora Rampazzo, Filippo Nalli, Yuri Borgianni, Franco Concli, L*ow-Cycle-Fatigue Properties of a 17-4 PH Stainless Steel Manufactured via Selective Laser Melting*, ICMMT 2020, Bangkok, Thailand

ICMMT 2020, Bangkok, Thailand **MEMBER OF THE TECHNICAL COMITTEE**
Presented paper: 2020 Lorenzo Maccioni, Lorenzo Fraccaroli, Franco Concli, *High-Cycle-Fatigue Characterization of an Additive Manufacturing 17-4 PH Stainless Steel*, ICMMT 2020, Bangkok, Thailand

ICMMT 2020, Bangkok, Thailand **MEMBER OF THE TECHNICAL COMITTEE**
Presented paper: 2020 Lorenzo Maccioni, Aurora Berni, Franco Concli, Yuri Borgianni, *Satisfaction with and Motivations behind the Use of 3D Printers in Fab Labs: the consequences for Design for Additive Manufacturing*, ICMMT 2020, Bangkok, Thailand

ICMEP2020, Budapest, Hungary
Presented paper: 2020 Lorenzo Fraccaroli, *Franco Concli*, 17-4 PH SS Manufactured via Selective Laser Melting: High Cycle Fatigue Properties, ICMEP2020, Budapest, Hungary

ICMEP2020, Budapest, Hungary
Presented paper: 2020 Lorenzo Fraccaroli, *Franco Concli*, 17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties, ICMEP2020, Budapest, Hungary

BEM/MRM 2020, Daytona Beach, Fl, USA
Presented paper: 2020 Franco Concli, Dynamic Modelling OF Gears: An Innovative Hybrid Fem-Analytical Approach, BEM/MRM 2020 (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

HPSM/OPTI 2020, Prague, Czech Republic **INVITED (KEYNOTE) SPEAKER**
Presented paper: 2020 Lorenzo Fraccaroli, Marco N. Mastrone, *Franco Concli*, Calibration Of The Fracture Locus Of An Aluminum Alloy, HPSM/OPTI 2020 (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

International Conference on Gears 2019, Munich, Germany
Presented paper: 2019 Franco Concli, Carlo Gorla, *Dynamic Models for Planetary Gearboxes SHM*

International Conference on Gears 2019, Munich, Germany
Presented paper: 2019 Franco Concli, Lorenzo Maccioni, Carlo Gorla, *Power loss analysis of different high-power density gearbox typologies: CFD analysis and experimental measurements on a cycloidal gear set*

AIAS 2019, Assisi, Italy
Presented paper: 2019 Franco Concli, Álvaro González Jiménez, Andrea Manes, Marco Giglio, *Experimental testing and numerical modelling of a Kevlar woven - Epoxy matrix composite subjected to a punch test*

AIAS 2019, Assisi, Italy
Presented paper: 2019 Franco Concli, Maccioni Lorenzo, *'Fracture locus of a CORTEN steel: Finite Element calibration based on experimental results'*

AIAS 2019, Assisi, Italy

Presented paper: 2019 Bonaiti Luca, Franco Concli, Carlo Gorla, Francesco Rosa, *Bending fatigue behavior of 17-4 PH gears produced via selective laser melting*

MPF 2019, Lisbon, Portugal
Presented paper: 2019 Franco Concli, Maccioni Lorenzo, Carlo Gorla, *Lubrication of Gearboxes: CFD Analysis Of A Cycloidal Gear Set*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

Material Characterization 2019, Lisbon, Portugal
Presented paper: 2019 Franco Concli, Maccioni Lorenzo, *Experimental-Numerical Calibration Of The Fracture Locus Of A Weathering Steel*, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

AIAS 2018, Villa San Giovanni, Italy
Presented paper: 2018 Franco Concli, Andrea Gilioli, *Numerical and experimental assessment of the static behavior of 3D printed reticular Al structures produced by Selective Laser Melting: progressive damage and failure*

AFM 2018, Ljubljana, Slovenia
Presented paper: 2018 Franco Concli, Bernasconi Andrea, Carlo Gorla, *Optimization of an innovative automatic valve geometry for concrete and drilling mud pump to avoid cavitation: non-Newtonian CFD modeling*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

AFM 2018, Ljubljana, Slovenia
Presented paper: 2018 Franco Concli, Massimiliano Gobbi, Carlo Gorla, *Comparative study of the aerodynamic performances of motorcycle racing wheels using numerical CFD simulations*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

AGMA Fall Technical Meeting 2017, USA **KEYNOTE/PLENARY SPEAKER**
Presented paper: 2017 Franco Concli, Carlo Gorla, *CFD simulation of power losses and lubricant flows in gearboxes*

AIAS 2017, Pisa, Italy
Presented paper: 2018 Franco Concli, *Austempered Ductile Iron (ADI) for gears: Contact and bending fatigue behavior*

International Conference on Gears 2017, Munich, Germany
Presented paper: 2017 Franco Concli, Carlo Gorla, *Numerical Modeling of the Churning Power Losses of Gears: an Innovative 3D Computational Tool Suitable for Planetary Gearbox Simulation*

International Conference on Gears 2017, Munich, Germany
Presented paper: 2017 Carlo Gorla, Conrado Edoardo, Rosa Francesco, Franco Concli, *Austempered Ductile Iron (ADI) for Gears: manufacturing preformances and tests*

Workshop: Efficienza e perdite delle trasmissioni ad ingranaggi, Milano, Italy, **INVITED SPEAKER & MEMBER OF THE TECHNICAL COMITTEE**
Title of presentation: 2016 Franco Concli, Different numerical approaches for different goals
Workshop: Lavorazioni degli ingranaggi 4.0, Milano, Italy

ADIdays, Minerbe VR, Italy, **INVITED SPEAKER**
Title of presentation: 2016 Franco Concli, ADI JS/800-10 in substitution of Nitrided EN-GJS-700-2 for Planetary Gearbox

Ph.D. Summer School (PoliMi - TUM): Applied lubrication in gear power transmissions and machine, Milano, Italy, **INVITED SPEAKER**
Title of presentation: 2016 Franco Concli, Gearbox efficiency, the role of CFD

AIAS 2016, Trieste, Italy
Presented paper: 2016 Franco Concli, Carlo Gorla, *Modellazione numerica dei flussi di lubrificante all'interno di un riduttore ad ingranaggi: determinazione della corretta lubrificazione di tutti i componenti meccanici*

Power Drive Innovation 2016, Parma, Italy, **INVITED SPEAKER**
Efficienza energetica delle trasmissioni a ingranaggi: il ruolo della CFD
(http://www.mecspe.com/programma-convegni/scheda/4285/Power-Drive-Innovation/

GearForum 2015, Parma, Italy, **INVITED SPEAKER**
Increasing efficiency of precision planetary gearboxes
(http://www.gearforum.it/it/)

International Conference on Gears 2015, Munich, Germany
Presented paper: 2014 Franco Concli, *Low-loss gears for high efficiency precision planetary gearboxes: influence of the gear design on the meshing and the churning power losses*

International CAEConference 2015, Pacengo, VR, Italy
Presented paper: 2014 Franco Concli, Effect of the machining tolerances on the transmission error of planetary gearboxes: a numerical approach

International Gear Conference 2014, Lyon, France
Presented paper: 2014 Franco Concli, Carlo Gorla, *Analysis of the power losses in geared transmissions – Measurements and CFD calculations based on open source codes*

International CAEConference 2014, Pacengo, VR, Italy
Presented paper: 2014 Franco Concli, *High efficiency, low backlash planetary speed reducer gearbox optimization by means of a multidisciplinary numerical approach*

Open source CFD International Conference 2013, Hamburg, Germany
Presented paper: 2013 Augusto Della Torre, Franco Concli, Carlo Gorla, Gianluca Montenegro, *Analysis of the power losses in geared transmissions – measurements and CFD calculations based on open source codes*

International Conference on Gears 2013, Munich, Germany
Presented paper: 2013 Franco Concli, Carlo Gorla, *A new methodology for the prediction of the no-load losses of gears: CFD and experimental investigation of the efficiency of a planetary gearbox* ISBN: 978-3-18-092199-0

International CAEConference 2013, Pacengo, VR, Italy
Presented paper: 2013 Franco Concli, Carlo Gorla, CFD analysis of the hydraulic losses of a gearbox: model validation and results

World tribology congress WTC 2013, Torino, Italy
Presented paper: 2013 Prof. Ing. Carlo Gorla, Dr.Ing. Concli Franco, Prof. Dr.-Ing. Karsten Stahl, Dr.-Ing. Michaelis Klaus, Dipl.-Ing. Hansjörg Schultheiß, Dipl.-Ing. Johan Paul Stemplinger, *Load independent power losses of ordinary gears: numerical and experimental analysis* ISBN: 9788890818509

International Gear Forum 2013, Parma, Italy

International CAEConference 2012, Pacengo, VR, Italy
Presented paper: 2012 Franco Concli, Carlo Gorla, *CFD Simulations of windage losses of a gearbox*

ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, Texas, USA
Presented paper: 2012 Carlo Gorla, Francesco Rosa, Franco Concli, Horatio Albertini, *Bending fatigue strength of innovative materials for wind turbines: effect of surface coatings* DOI**:** 10.1115/IMECE2012-86513

AFM 2012, Split, Croatia
Presented paper: 2012 Franco Concli, Carlo Gorla, *Oil squeezing power losses of a gear pair: a CFD analysis*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK
DOI**:** 10.2495/AFM120041

ESDA2012 – Biennal conference on Engineering Systems Design and Analysis, Nantes, France
Presented paper: 2011 Franco Concli, Carlo Gorla, *Analysis of the oil squeezing power losses of a spur gear by mean of CFD simulations*
DOI**:** 10.1115/ESDA2012-82591

AIAS 2011, Palermo, Italy
Presented paper: 2011 Franco Concli, Carlo Gorla, Analisi degli effetti delle approssimazioni dello spettro reale di carico sul danneggiamento delle singole dentature ISBN:9788895272856

International CAEconference 2011, Verona, Italy
Presented paper: 2011 Franco Concli, Carlo Gorla, *Churning power losses in planetary speed reducer: computational-experimental analysis*

MPF 2011 conference, Kos, Greece
Presented paper: Franco Concli, Carlo Gorla, *Computational and experimental analysis of the churning power losses in an industrial planetary speed* - Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK
DOI**:** 10.2495/AFM120261

International Conference on Gears 2010, Munich, Germany
Presented paper: 2010 Prof. Carlo Gorla, Ing. Franco Concli, Ing.Rodolfo Arrigoni, Ing.Enzo Cognini, Ing.Mauro Musolesi, *Planetary speed reducers: backlash, stiffness, efficiency*

Experience in academic teaching

- Grundlagen der Konstruktionslehre und Maschinenzeichnen (German) 2021-2022 (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2021-2022 (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design – FEM LAB (English) 2021-2022 (graduate level), Free University of Bolzano, Mechanical Engineering
- Thermomechanical Measurements (English) 2020-2021

(under-graduate level), Free University of Bolzano, Mechanical Engineering
- Grundlagen der Konstruktionslehre und Maschinenzeichnen (German) 2020-2021
  (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2020-2021
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design – FEM LAB (English) 2020-2021
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Engineering simulations with open source codes 2nd Edition (English) 2021
  (open to industry and Ph.D. students), Free University of Bolzano
- Grundlagen der Konstruktionslehre und Maschinenzeichnen (German) 2019-2020
  (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2019-2020
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design – FEM LAB (English) 2019-2020
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Engineering simulations with open source codes (English) 2019
  (open to industry and Ph.D. students), Free University of Bolzano
- Grundlagen der Konstruktionslehre und Maschinenzeichnen (German) 2018-2019
  (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2018-2019
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design – FEM LAB (English) 2018-2019
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2017-2018
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design – FEM LAB (English) 2017-2018
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Machine Design (English) 2017-2018
  (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Advanced topics on Machine Design - Materials behaviour and machine elements (English) 2016-2017
  (graduate level), Free University of Bolzano, Mechanical Engineering
- Machine Design (English) 2016-2017
  (under-graduate level), Free University of Bolzano, Mechanical Engineering
- Summer School Applied lubrication in gear power transmissions and machine elements (English) 2016
  (Ph.D. lvel) Politecnico di Milano – Technische Universität München
- Manufacturing Technology LAB (English) 2015-2016
  (under-graduate level) Free University of Bolzano
- Manufacturing Technology LAB (English) 2014-2015
  (under-graduate level) Free University of Bolzano
- Manufacturing Technology LAB (English) 2013-2014
  (under-graduate level) Free University of Bolzano
- Progettazione Meccanica (Italian) 2013
  (post-graduate level), Centro di Formazione Veronesi (TN) [in co-operation with Politecnico di Milano], Mechatronics
- Machine Design (TA) (English) 2012-2013
  (under-graduate level), Politecnico di Milano, Mechanical Engineering
- Costruzione di Macchine II (Ex.) (Italian) 2011-2012
  (under-graduate level), Politecnico di Milano, Mechanical Engineering
- Costruzione di Macchine II (Ex.) (Italian) 2010-2011
  (under-graduate level), Politecnico di Milano, Mechanical Engineering
- Costruzione di Macchine II (TA). (Italian) 2009-2010
  (under-graduate level), Politecnico di Milano, Mechanical Engineering

Other academic responsibilities

Innovation in teaching and learning activities:

- Adoption of Open-Source free engineering software (FEA) in the master's degree courses
- Creation of an online self-evaluation test to assess students' prior knowledge (both for the bachelor and the master courses)
- Adoption of the OLE as active platform for teaching.
- Use of MS Teams for online and hybrid lectures (E-LEARNING).
- Registration of the lectures.
- Use of the digital whiteboard; share of the pfd file.
- Multi-language didactic material: slides, Study Handouts, short Technical Papers
- Three-lingual book for the bachelor course under preparation.
- Development of innovative methods of teaching for students and life-long-learning in the context of the project E-EDU4.0
- Teaching excursions (LM-33).
- Hands-on exercises (LEARNING BY DOING).
- Problem solving – project works (PROJECT BASED LEARNING).

Supervisions:

- Postgraduate thesis supervision: 1 student, subject area Mechatronics (Centro di Formazione Veronesi)
- PhD thesis supervision: 4 student, subject area Mechanical Engineering (UniBz – ASE PhD)
- Master thesis supervision: 5 student, subject area Mechanical Engineering (Unibz / Cranfield University (UK))
- Undergraduate thesis supervision: 27 students, subject area Mechanical Engineering (UniBz)

- **Ph.D. Opponent**: 2 Ph.D students, subject area Mechanical Engineering (PoliMi (I), Chalmers University of Technology Göteborg (S))
- The applicant has co-supervised 6 students in their Project Work (Study Project) for the M.Sc. in Industrial Mechanical Engineering at UniBz
- Undergraduate traineeships supervision: 6 students, subject area Mechanical Engineering (UniBz)
- Graduate traineeships supervision: 1 student, subject area Mechanical Engineering (UniBz)
- **Supervisor of 1 Research Assistant – financial coverage: IDERPLANE H2020 project (PI F. Concli)**
- **Supervisor of 1 Research Assistant – financial coverage: CUBE industrial project (PI F. Concli)**
- **Supervisor of 1 Research Assistant Seal of Excellence – financial coverage: WEAR Province Bolzano (PI F. Concli)**
- **Supervisor of 1 RTD-A "Research" – financial coverage: CUBE industrial project (PI F. Concli)**

Review of research projects:
- **REPRISE** 2020 Reviewer for Ricerca Nazionale – FAR 2020 - Università degli studi di Modena e Reggio Emilia
- **REPRISE** 2021 Reviewer for Ricerca Nazionale - PROJECT TYPE A1 - Università di Parma
- **CINECA** 2021 Reviewer for PRIN2020 2020FZK588
- **CINECA** 2021 Reviewer for PRIN2020 2020575J9Z
- **CINECA** 2021 Reviewer for PRIN2020 20208LSES4
- **DFG** 2024 Reviewer for STA 1198/ 34-1
- Registered to the EU Funding Tender Portal EX2021D497667
- Registered to the REPRISE portal
- Registered to the CINECA portal as reviewer for VQR

Institutional Roles:
- Member of the QA commission for Research & 3rd mission for D3 – Fac. Engineering
- Delegate for 3rd mission activity for Fac. Engineering
- Representative of the ING-IND/14 SSD for Unibz
- Head of the Laboratory for Industrial and Agroforestry Technologies KU06 (2018/2019)
- Head of the Technical Room – Material Characterization Laboratory E0.10 (since 2018)
- Reference lecturer in the MIUR database for the Bachelor in Industrial and Mechanical Engineering (L-9) in the Academic Years 2018/2019, 2019/2020, 2020/2021 and 2021/2022
- Safety manager for the Technical Room – Material Characterization Laboratory E0.10 (since 2018)
- Member of the AQ group for the Master in Industrial Mechanical Engineering (LM-33) in the Academic Years 2018/2019, 2019/2020, 2020/2021 and 2021/2022
- Tutor for the Bachelor in Industrial and Mechanical Engineering (L-9) in the Academic Years 2018/2019, 2019/2020, 2020/2021 and 2021/2022
- Tutor for the Master in Industrial Mechanical Engineering (LM-33) in the Academic Year 2021/2022
- Member of the working group "XCT lab NOI Brunico" (AES Innovation Excellence South Tyrol)
- Member of the working group for the "EUR-ACE accreditation" of the bachelor L-9
- Member of the working group for the "EUR-ACE accreditation" of the master LM-33
- Member of the working group "Exams" for the L-9 study council
- Member of the working group "Stakeholder Meeting 2017"
- Member of the working group "Stakeholder Meeting 2019"
- Member of the working group "Stakeholder Meeting 2021"
- Participation to the "On-site Evaluation Visit" for the Self-Evaluation of the Faculty of Science and Technology as representative of the FaST
- Member of the PhD commission of the PhD in Sustainable Energy and Technology (SET) of the Faculty of Science and Technology 2017-2019
- Member of the PhD commission of the PhD in Advanced System Engineering (ASE) of the Faculty of Science and Technology 2020 - to date
- Member of the commission for the admission to the PhD ASE 2020 36th cycle
- Member of the commission for the admission to the B.Sc. in Industrial and Mechanical Engineering since 2019
- Member of the OFA commission for the B.Sc. in Industrial and Mechanical Engineering since 2020
- Member of Final Exam commission for the B.Sc. in Industrial and Mechanical Engineering (L-9) (23.07.2019)
- Member of Final Exam commissions for the M.Sc. in Industrial Mechanical Engineering (LM-33) (01.10.2019, 21.07.2020, 17.03.2021)
- Substitute member of the commission for the admission to the PhD ASE 2021 37th cycle – PON projects
- Person in charge for the research agreement MERC with Politecnico di Milano.
- Person in charge for safety building L 5th floor (Preposto alla Sicurezza)

Participation to commissions:
- Member of the Ph.D. Committee "Sustainability Energy and Technologies" at FaST, UNIBZ, 2017-2018
- Member of the Ph.D. Committee "Sustainability Energy and Technologies" at FaST, UNIBZ, 2018-2019
- Member of the Ph.D. Committee "Advanced-Systems Engineering" at FaST, UNIBZ, 2019-2020
- Member of the Ph.D. Committee "Advanced-Systems Engineering" at FaST, UNIBZ, 2020-2021
- Appointed tutor for students attending the B.Sc. in Industrial and Mechanical Engineering and the M.Sc. course in Industrial Mechanical Engineering, UniBz
- Member of the AQ group for LM33, UniBz
- Reference lecturer in the MIUR database for the L-9 B.Sc. in Industrial and Mechanical Engineering, Unibz
- Head of the Laboratory for Industrial and Agroforestry Technologies KU06 (2018/2019)
- Head of the Technical Room – Material Characterization Laboratory E0.10 (since 2018)
- Member of the working group for the "EUR-ACE accreditation" of the bachelor L9

- Member of the working group for the “EUR-ACE accreditation” of the master LM-33
- Member of the working group “Exams” for the L9 study council
- Member of the working group “Stakeholder Meeting 2017”
- Member of the working group “Stakeholder Meeting 2019”
- Member of the working group “Stakeholder Meeting 2021”
- Member of the working group “XCT lab NOI Brunico”
- Member of the admission commission “PhD ASE 2020”
- Member of the selection commission “PhD ASE 2021”
- Member of the selection commission “PhD ASE 2023”
- Member of the admission commission “Bachelor Mechanical Engineering 2019”
- Member of the admission commission “Bachelor Mechanical Engineering 2020”
- Member of the admission commission “Bachelor Mechanical Engineering 2021”
- Member of the admission commission “Bachelor Mechanical Engineering 2022”
- Member of the admission commission “Bachelor Mechanical Engineering 2023”
- Member of the following commissions:
    - “ST-IME 4 “Finite Element Method FEM”
    - “ST-ING 3 “Machine Design”
    - “ST-ING 8 Material Science and Technology”
    - “ST-TA 19 Material Science and Technology”
    - “ST-ING 8 Material Science and Technology”
    - “ST-IME 7 Finite Element Method FEM”
    - “ST-ING 11 Material Science and Technology”
    - “ST-TA 48 Material Science and Technology”
    - “ST-ING 13 Elementi di Costruzione e Disegno di Macchine”
    - “ST-20 Material and construction sciences/ Material Science and Technology”
    - “ST-37 Machine Construction and Design”
    - “ST-40 Advanced topics on machine design / Finite Element Method FEM”
    - "ST-TA-17 Scienze dei materiali e delle costruzioni / Scienza e Tecnologia dei Materiali”
    - “ST-47 Machine construction and Design”
    - “ST-48 Advanced topics on machine design / Finite Element Method FEM”
    - “ST-51 Machine construction and Design”
    - “ST-45 Scienze dei materiali e delle costruzioni / Scienza e Tecnologia dei Materiali”
    - “ST-10 Advanced topics on machine design / Finite Element Method FEM”
    - “ST-45 Scienze dei materiali e delle costruzioni/Scienza e Tecnologia dei Materiali”
    - “ST-15 Scienze dei materiali e delle costruzioni/Scienza e Tecnologia dei Materiali”
    - “AR ING-IND/14 2019”
    - “AR ING-IND/13” 31/05/2023, n. 903/2023
    - “ST-70“ Dynamics of Mechanical Systems
    - “ENG-21: Materials Science and Technology”
- Member of the Final Exam commission Master in Industrial Mechanical Engineering (LM-33) (01.10.2019)
- Member of the Final Exam commission Master in Industrial Mechanical Engineering (LM-33) (21.07.2020)
- Member of the Final Exam commission Master in Industrial Mechanical Engineering (LM-33) (17.03.2021)
- Member of the Final Exam commission Master in Industrial Mechanical Engineering (LM-33) (15.03.2021)
- Member of the Final Exam commission Master in Industrial Mechanical Engineering (LM-33) (18.07.2023)
- Member of the Final Exam commission Bachelor in Industrial and Mechanical Engineering (L-9) (18.02.2018)
- Member of the Final Exam commission Bachelor in Industrial and Mechanical Engineering (L-9) (02.10.2018)
- Member of the Final Exam commission Bachelor in Industrial and Mechanical Engineering (L-9) (23.07.2019)
- Member of the Final Exam commission Bachelor in Industrial and Mechanical Engineering (L-9) (18.07.2023)

The applicant has held the following seminars:

- FEM course: engineering simulations with open-source codes 2021 (for PhDs and industries)
- CFD-Berechnung von Verzahnungslehre-Leerlaufverlusten (TUM - Munich)
- FEM course: engineering simulations with open-source codes 2019 (for PhDs and industries)
- Gear Efficiency - Different numerical approaches for different goals (POLIMI - Milan)
- Increasing efficiency of precision planetary gearboxes (GearForum Parma)
- ADI JS/800-10 in substitution of Nitrided EN-GJS-700-2 for Planetary Gearbox (ADIdays - Verona)
- Efficienza energetica delle trasmissioni a ingranaggi: il ruolo della CFD (Power Drive Innovation - Parma)
- Applied lubrication in gear power transmissions and machine (Ph.D. summer school POLIMI/TUM - Milano)
- Third Mission Seminars for high school teachers and companies in the framework of the EDU 4.0 (Engineering Education 4.0) project
- Load-independent Power Losses in Gear Transmissions (POLIMI - Milan)
- Code_Aster in Italy, Firenze
- 1st Workshop on the use of Numerical Analysis in Engineering, UniBz
- High- and low-cycle-fatigue properties of 17–4 PH manufactured via selective laser melting in as-built, machined and hipped conditions (2021 Aachen University)
- Drückwalzen „Produktionsverfahren“
- Hochfeste komplexe Bauteile samt Verzahnung aus einem Blech geformt @ TU Kaiserslautern

The applicant has organized following seminars and events:

- Applications and design with advanced composite materials: what we can do today and some ideas for tomorrow (in collaboration with UNIPD)
- FEM course: Engineering simulations with open source codes (for PhDs and industries)

- FEM course: Engineering simulations with open source codes 2nd edition (for PhDs and industries)
- FEM course: Engineering simulations with open source codes in the framework of the SEQP project
- Advanced design of mechanical systems: the role of bearings (in collaboration with Schaeffler Technologies GmbH & Co. KG)
- On model-based approaches fir Prognostic Health Monitoring (in collaboration with POLIMI)
- Stakeholder Meeting 2017 (L-9, LM-30, LM-33)
- Stakeholder Meeting 2019
- Stakeholder Meering 2021 (LM-33)
- Schaeffler Bearings and Schaeffler Bearing Simulation Tools (in collaboration with Schaeffler Technologies GmbH & Co. KG)
- Member International Scientific Advisory Committee of AFM 2020 conference
- Member International Scientific Advisory Committee of Material Characterization 2021 conference
- Member International Scientific Advisory Committee of CMEM 2021 conference
- Member International Scientific Advisory Committee of AFM/MPF 2021 conference
- Member International Scientific Advisory Committee of ICMEP 2020 conference
- Member International Scientific Advisory Committee of ICMEP 2021 conference
- Member International Scientific Advisory Committee of ICMEP 2022 conference
- Member International Scientific Advisory Committee of ICMMT 2020 conference
- Member International Scientific Advisory Committee of WMMES 2021 conference
- Member International Scientific Advisory Committee of WMMES 2022 conference
- LUNA 2019 (Lunga Notte della Ricerca)
- UNIBZ Lab tour for high school's teachers (ITI G.Galilei) 2019
- The next level of mobility (in collaboration with Dopplemayr Italia)
- Rendezvous mit dem Traumberuf 2020
- Rendezvous mit dem Traumberuf 2022
- Rendezvous mit dem Traumberuf 2023
- ETRIA, World Conference TRIZ Future 2021, Bolzano
- Supply chain risk management (in collaboration with Uni. Udine)
- Thermomechanical Processing of Fully Ferritic Laves Phase Strengthened Stainless Steels (in collaboration with Aachen University)
- Rendezvous mit dem Traumberuf 2022
- Stirling Engine technology: potential, challenges and future perspectives (in collaboration with POLIMI)
- Drückwalzen „Produktionsverfahren" Hochfeste komplexe Bauteile samt Verzahnung aus einem Blech geformt
- LUNA 2023 @ Brno University of Technology
- Festival "mille e una scienza"
- Uni-meets-Schools

Scientific dissemination initiatives:
- 2017 – Elementi di Macchine, monthly dissemination paper in the magazine Organi di Trasmissione, Tecniche Nuove Spa
- 2018 – to date – Quaderni di progettazione, monthly dissemination paper in the magazine Il Progettista Industriale, Tecniche Nuove Spa
- 2021 – to date – Ricerca: monthly dissemination paper in the magazine Organi di Trasmissione, Tecniche Nuove Spa
- 2021 newsletter for the Chamber of Commerce Bolzano
- 2023 Terza Missione RAI Trentino-AltoAdige

Recognitions:

Awards:
- 2016 Special Technical Award – given by Bonfiglioli MDS
- 2018 Top 20 paper 2017/18 Lubrication Science – Wiley
- 2020 Premio attività didattica 2018-2020 Unibz
- 2021 Best paper Award – WMMES Conference 21
- 2022 World's Top 2% Scientists della Stanford University 2021-2022
- 2023 Nominated Full Member of the Sigma Xi (The Scientific Research Honor Society)
- 2023 Best paper Award – ISIEA 2023

Selected papers & invited speeches:
- 2021 Lecture @ Aachen University KEYNOTE SPEAKER
- WIT UT20 conference – selected paper
- WIT CMEM20 conference – selected paper
- Hindawi Shock and Vibration - selected special issue to become an annual issue
- WIT AFM20 conference – invited (keynote) speaker
- WIT CMEM21 conference – invited (keynote) speaker
- WIT HPSM/OPTI21 conference – invited (keynote) speaker
- Workshop: Efficienza e perdite delle trasmissioni ad ingranaggi, Milano – KEYNOTE SPEAKER
- Code_Aster in Italy, Firenze – KEYNOTE SPEAKER
- ADIdays, Minerbe VR, Italy – KEYNOTE SPEAKER
- Power Drive Innovation 2016, Parma, Italy – KEYNOTE SPEAKER
- GearFORUM 2015, Parma, Italy – KEYNOTE SPEAKER

Other recognitions:

- Seal of Excellence Project – PI
- WMMES conference chairman

Memberships

Member of the AIAS scientific association since 2011

Associate Editor for Springer Nature:
- Associate Editor for "International Journal of Mechanical and Materials Engineering"

Editorial Board Member for Strojniški vestnik:
- Member of the Editorial Board of the "International Journal Strojniški vestnik – Journal of Mechanical Engineering"

International Editor for WITpress:
- Member of the Editorial Board of the "International Journal of Computational Methods and Experimental Measurements"

International Editor for SAGE
- Member of the Editorial Board of the "Advances in Mechanical Engineering"

International Editor for Tech Science Press:
- Member of the Editorial Board of the international Journal "Fluid Dynamics & Material Processing"

International Editor for Gavin Publishers:
- Member of the Editorial Board of the international Journal "CTFR"

Member of scientific committee for Tecniche Nuove:
- Member of the technical committee of "Organi di Trasmissione"

Guest Editor for Frontiers – Mechanical Engineering
- Special issue: "Numerical methods for additive manufacturing materials"

Lead Guest Editor for Hindawi - J. Shock and vibrations:
- Special issue: "Structural Health Monitoring" ***AWARDED SPECIAL ISSUE***
- Annual issue: "Structural Health Monitoring"

Lead Guest Editor for Springer Nature - International Journal of Mechanical and Materials Engineering:
- Topic collection: "Tribology of components in mechanical systems"

Guest Editor for MDPI – Metals
- Special issue: "Applications of CFD on Metallic Materials"

Member of the International Scientific Advisory Committee for ICMEP
- Conference ICMEP 2020
- Conference ICMEP 2021
- Conference ICMEP 2022

Member of the International Scientific Advisory Committee for ICMMT
- International Conference on Materials and Manufacturing Technologies 2020

Member of the International Scientific Advisory Committee for WMMES
- Conference WMMES 2020

Member of the International Scientific Advisory Committee for WIT
- Conference AFM 2020
- Conference Material Characterization 2021
- Conference Computational Methods and Experimental Measurements 2021
- Conference AFM/MPF 2021

Member of the Organizing Committee for the International TFC21
- Conference Triz Future Conference 2021

Member of scientific committees for Elsevier:
- Peer Reviewer for the "International Journal of heat and mass transfer"
- Peer Reviewer for the "International Journal of Computer and Fluids"
- Peer Reviewer for "Tribology International"
- Peer Reviewer for "Mechanism and Machine Theory"
- Peer Reviewer for "International Journal of Mechanical Sciences"
- Peer Reviewer for "Applied Mathematical Modelling"
- Peer Reviewer for "Heliyon"
- Peer Reviewer for "Material Science and Engineering"

Member of scientific committee for SAGE:

- Peer Reviewer for the “Proceedings of the iMechE, Part J: Journal of Engineering Tribology”
- Peer Reviewer for the “Proceedings of the iMechE, Part B: Journal of Engineering Manufacture”

Member of scientific committees for MDPI:
- Peer Reviewer for the “Fluids”
- Peer Reviewer for the “Energies”

Member of scientific committee for EnPress:
- Peer Reviewer for the Journal “Thermal Science and Engineering”

Member of scientific committee for Periodica Polytechnica:
- Peer Reviewer for “Mechanical Engineering”

Member of scientific committee for Frontiers:
- Peer Reviewer for “Frontiers Mechanical Engineering”

Member of scientific committees for Springer:
- Peer Reviewer for “Forschung im Ingenieurwesen”
- Peer Reviewer for “Nonlinear Dynamics”

Member of scientific committee for Wiley:
- Peer Reviewer for “Lubrication Science”

Member of scientific committee for Strojniski Vestnik:
- Peer Reviewer for “Journal of Mechanical Engineering”

Member of scientific committee for Bentham Science Publishers:
- Peer Reviewer for “The Open Mechanical Engineering Journal”

Member of scientific committee for InderScience Publishers:
- Peer Reviewer for “Progress in Computational Fluid Dynamics, An International Journal”

Member of scientific committee for IGI Global:
- Peer Reviewer for “International Journal of Manufacturing Materials and Mechanical Engineering”

Member of scientific committee for CEAS:
- Peer Reviewer for “Aeronautical Journal”

Member of scientific committees for Springer Nature:
- Peer Reviewer for “Scientific Reports”

Member of scientific committees for EDP Sciences:
- Peer Reviewer for “Mechanics & Industry”

Member of scientific committees for EDP Sciences:
- Peer Reviewer for “Metrology and measurement systems”

Research and scholarships

International research activities and scholarships

Date granted	Award Holder(s)	Funding Body	Title
2018	Politecnico di Milano, Libera Università di Bolzano *F. Concli (PI),* *R. Vidoni (CI)* Università di Brescia, INSA - Institut National des Sciences Appliqueées (F), Argo Srl	EU (H2020 – Cleansky-2 call)	H2020 Cleansky 2 – IDERPLANE Innovative Design for Reliable Planet Bearings (CLEAN SKY 2 CALL FOR PROPOSALS 07 Commissione Europea) € 749.968,75
2018	Libera Università di Bolzano *D. Matt (PI),* *F. Concli (TM)*	EU (INTERREG-I-A)	INTERREG-I-A E-EDU4.0 Network transfrontaliero di formazione 4.0 € 180.072,00
2021	Libera Università di Bolzano *F. Concli (PI)*	Provincia di Bolzano – Seal of Excellence Project	SEAL OF EXCELLENCE - WEAR Un modello adattivo multiscala per la modellazione dell'usura € 167.837,28
		TOT	**€ 1,097,878.03**

National research activities and scholarships

Date granted	Award Holder(s)	Funding Body	Title
2009-2011	Politecnico di Milano, Flame spray s.p.a, Galbiati s.r.l., Colmegna s.r.l.	Regione Lombardia (I)	XL-GEAR Materiali innovativi per lo sviluppo di ingranaggi di grandi dimensioni [cup E77I1000090007] € 1,090,381.88
2013	Politecnico di Milano	ENI (Ente nazionale energie) (I)	R03/13 Sistemi di mitigazione meccanica dei fenomeni di bunkering (Rep 3/2013 prot 26UOR DAR)
2013	Politecnico di Milano, MIT	ENI (Ente nazionale energie) (I)	CONCENTRATING SOLAR POWER Verification and new design of the actuation system
2014-2016	Bonfiglioli Mechatronic Research	Provincia autonoma di Trento (I)	LP6 RESEARCH PROJECT Ricerca su sistemi meccatronici ad alta efficienza (riduttori ad ingranaggi, motore elettrico e azionamento elettronico) per applicazioni industriali € 4,634,850.00 total € 1,962,463.00 founded
2015-2016	Bonfiglioli Mechatronic Research, FBK	Provincia autonoma di Trento (I) (within LP9)	FBK Sviluppo di materiali a base carbonio resistenti all'usura per l'applicazione a elementi di riduzione meccanica € ≈45,000.00
2015-2016	Bonfiglioli Mechatronic Research, Politecnico di Milano	Provincia autonoma di Trento (I) (within LP9)	P24/15 Caratterizzazione di una ghisa austemperata per ingranaggi € ≈27,000.00
2015-2016	Bonfiglioli Mechatronic Research	Provincia autonoma di Trento (I) (within LP9)	LOW-LOSS GEARS Caratterizzazione e valutazione di rotismi epicicloidali ad elevata efficienza € ≈45,000.00
2016	Libera Università di Bolzano *G. Orzes (PI)* *F. Concli (TM),* *Y. Borgianni (TM)*	Libera Università di Bolzano (CRC call 2016)	AMDAPA Fabbricazione Additiva FDM: Accuratezza Dimensionale ed Accettabilità Prodotto € 45,000.00
2017	Libera Università di Bolzano *F. Concli (PI)*	Libera Università di Bolzano (CRC call 2017)	M.AM.De. Additive manufacturing for advanced functional design € 37,000.00
2017	Libera Università di Bolzano *F. Concli (Resp.)*	(Politecnico di Milano) (I)	MERC Accordo quadro di ricerca per collaborazione scientifica nel settore ING-IND/14 con utilizzo a titolo gratuito dei laboratori e dei software a disposizione del Dipartimento di Meccanica del PoliMi
2018	Libera Università di Bolzano *F. Mazzetto (PI),* *M. Bietresato (CI),* *F. Concli (TM)*	Consorzio Agrario di Bolzano	DYNOTRACTOR 2 Messa a punto di un apparato sperimentale per il test in campo dei trattori
2018	Libera Università di Bolzano *M. Bietresato (PI),* *F. Mazzetto (CI),* *F. Concli (TM),* *M. Renzi (TM)*	Libera Università di Bolzano (CRC call 2018)	BIO-TRACT-EFFICIENCY Experimental investigation on the efficiency of agricultural machines powered with different fuels € 60,500.00
2018	Libera Università di Bolzano *F. Concli (PI)*	Libera Università di Bolzano (RTD call 2018)	SMOG Structural Health Monitoring of Mechanical Gearboxes € 10,000.00
2021	Libera Università di Bolzano *F. Concli (PI)*	Libera Università di Bolzano (RTD call 2021)	APE Additive Manufacturing: impact of the defects on the structural properties and on the self-lubrication capabilities € 10,000.00
2021	Libera Università di Bolzano *F. Mazzetto (PI),* *M. Bietresato (CI),* *F. Concli (TM)*	Consorzio Agrario di Bolzano	DYNOTRACTOR 3 Messa a punto di un apparato sperimentale per il test in campo dei trattori

TOT **€ 6,004,731.88**

Third-Party Collaborations

Date granted	Award Holder(s)	Funding Body	Title
2005-	Politecnico di Milano	Agusta Westland (I)	P47/06 Gear Tooth Bending Fatigue Characterization of Helicopter Transmission: Effect of Design and Manufacturing Parameters and Megacycle Fatigue – Case Hardened Carburized Gears
2006-	Politecnico di Milano	Agusta Westland (I)	P56/07 Gear Tooth Bending Fatigue Characterization of Helicopter Transmission: Effect of Material and Manufacturing Parameters on Nitrided Gears
2010	Politecnico di Milano	TecnoIngranaggi (I)	HPG High precision planetary gearboxes – efficiency, backlash and torsional stiffness characterization
2012	Politecnico di Milano	Gambro-Dasco S.p.A. (I)	JN-010312 – P67/12 Lifetime calculation for Artis Blood Pump Motor: analysis of critical components MD04410 € ≈12,000.00
2013	Politecnico di Milano	Bauknecht Hausgerate GmbH (D)	P58/09 - EUREKA WASHERS Bearing lifetime calculation and testing
2017	Libera Università di Bolzano *R. Vidoni (PI)*	Bonfiglioli Mechatronic Research (I) *F. Concli (Resp.)* (Contract Research)	TN2320-C Caratterizzazione vibro-acustica di riduttori ad ingranaggi per applicazioni meccatroniche € 7,000.00
2017	Libera Università di Bolzano *M. Renzi (PI),* *F. Concli (CI)*	Röchling Automotive S.r.l. (I) (Contract Research)	SCR-REF Fluid dynamic simulation of a SCR tank refilling system € 8,000.00
2017	Libera Università di Bolzano *F. Concli (Resp.)*	Giorgio Bonori (I)	CALYX Accordo per l'utilizzo a titolo gratuito del software Calyx Transmission3D
2017	Libera Università di Bolzano *F. Concli (Resp.)*	SMT (UK)	MASTA Accordo per l'utilizzo a titolo gratuito del software Masta
2017	Politecnico di Milano *C. Gorla (PI)* *F. Concli (TM)*	Costamp (I)	COSTAMP Fatigue assessment of Die Cast Moulds € ≈30,000.00
2018	Politecnico di Milano	FCA (I)	GearTEST Gear Fatigue Characterization
2018	Libera Università di Bolzano *F. Concli (PI)*	Schaeffler Technologies GmbH & Co. KG (D) (Contract Research)	LUBRICAT Churning in Rolling Bearings Simulation with OpenFOAM(R) € 12,000.00
2018	Libera Università di Bolzano *F. Concli (PI)*	Schaeffler Technologies GmbH & Co. KG (D) (Contract Research)	LUBRICAT II Lubrication simulations of a cylindrical-roller-bearing € 13,000.00
2019	Libera Università di Bolzano *F. Concli (PI)*	Schaeffler Technologies GmbH & Co. KG (D) (Contract Research)	CUBE Lubrication simulations of a cylindrical-roller-bearing € 267,000.00
2020	Libera Università di Bolzano *F. Concli (PI)*	3DKG G.m.b.H. (I) (Contract Research)	CFRP Caratterizzazione materiale (plastica rinforzata con fibre di carbonio) € 150.00
2020	Libera Università di Bolzano *F. Concli (PI)*	Edelweiss S.a.S (I) (Contract Research)	FABRIC Prove di fatica su componenti soggetti a vibrazioni € 1220.00

2021	Libera Università di Bolzano *F. Concli (PI)*	Madshus	MADSHUS Sviluppo di modelli numerici per la progettazione di sci
2021	Libera Università di Bolzano *F. Concli (PI)*	Skiskett	SKISKETT Skiroll optimization via FEM € 500.00
2022	Libera Università di Bolzano *F. Concli (PI)*	Holz Pichler	HP Modellazione numerica ed ottimizzazione di pannelli in cippato di conifera € 20,000.00
* PI – Principal Investigator, ** CI – Co-Investigator, *** TM – Team Member			

TOT **€ 370,870.00**

Submitted projects for fundings (under evaluation)

Data	Role	Funding agency	Project title
2021	*Franco Concli (PI for Unibz)*	H2020 - EUREKA EUROSTARS 2021	PRECURSOR Development of a faster, traceable and sustainable Vacuum Tissue Processor (VTP) € 952.148,00
2021	E. Rauch (PI) *F. Concli (TM)*	ESF 2021/2022_axis III Education_Lifelong learning initiatives for the workforce - Frame project Fondo Sociale Europeo	SFPQ Smart Enterprise Qualification Program € 113.458,00

List of collaborations with research institutes or universities

- Politecnico di Milano (H2020 IDERPLANE project, PRIN proposal, MERC agreement, publications, research seminars, summer school, thesis)
- Università di Catania (PRIN proposal)
- Politecnico di Torino (H2020 proposal, PRIN proposal)
- Chalmers University Göteborg (H2020 PRECURSOR proposal under evaluation, research activities, thesis)
- Università di Brescia (H2020 IDERPLANE project)
- Sapienza Università di Roma (M.AM.De. project, TN2320-C project, publications)
- Technical University of Munich (publications, seminars)
- Fondazione Bruno Kessler FBK (research activities)
- Cranfield University (UK) (thesis)
- Strathclyde University (UK) (publications)
- Politecnico di Bari (seminars)
- Air Force Institute of Technology Poland (publications)

List of collaborations with industry

- Apparatebau (Thesis, internships)
- 3dgk (research activities)
- Leitner (Internships)
- Engines Engineering (Thesis, internships)
- Tanzer Maschinenbau (Thesis, internships)
- Röchling Automotive (SCR-REF project, internships)
- Bonfiglioli (TN2320-C project, TN2077 project, internships, publications, research seminars)
- Schaeffler Technologies (LUBRICAT project, LUBRICAT II project, CUBE project, research seminars)
- Iveco (Thesis, internships)
- FCA (Thesis, research activities in collab. with PoliMi)
- Seppi M (Thesis, internships)
- Agusta Westland (P47/06 project, P56/07 Project, thesis, publications, research activities in collab. with PoliMi)
- Leonardo Helicopters (publications, research activities in collab. with PoliMi)
- Argo (H2020 IDERPLANE project, H2020 PRECURSOR proposal under evaluation)
- Salewa (internships)
- Valbruna (internships)
- Brembo (research activities in collab. with PoliMi)
- Pirelli (research activities in collab. with PoliMi)
- Cima (research activities in collab. with PoliMi)
- Gambro (research activities in collab. with PoliMi)
- Flame Spray S.p.a. (XL-GEAR project, publications)
- Galbiati S.r.l. (XL-GEAR project, publications)
- D'Appolonia (XL-GEAR project, publications)
- Colmegna S.r.l. (XL-GEAR project, publications)
- TecnoIngranaggi (HPG project, publications)
- Costamp (research activities in collab. with PoliMi, thesis)
- SMT (MASTA agreement)

- Giorgio Bonori (CALYX agreement, thesis, research activities, publications)
- Doppelmayr (research activities)
- Skitrab (research activities, thesis, publications)
- Lincoln Electric Italia S.r.l. (internship, study-project)
- Comer Industries (frame agreement for research, research activities)
- Edelweiss S.a.S. (FABRIC project, research activities)
- 3DKG G.m.b.H. (3DKG project, research activities)
- Madshus (research activities, frame agreement for research, thesis)
- Skiskett (research activities, frame agreement for research)

Patents

Patents

- 2021 Maccioni, L., Concli, F., Nested cycloidal gearbox, Intellectual property rights transferred to Unibz (04 Novermber 2021)

Main Publications

2012

International Journals

- 2012 Carlo Gorla, *Franco Concli*, Karsten Stahl, Bernd-Robert Höhn, Klaus Michaelis, Hansjörg Schultheiß, Johan-Paul Stemplinger, *CFD Simulations of splash losses of a gearbox* - Advances in Tribology, Article n.616923 – Hindawi, DOI**:** 10.1155/2012/616923

2013

- 2013 Carlo Gorla, *Franco Concli*, Karsten Stahl, Bernd-Robert Höhn, Klaus Michaelis, Hansjörg Schultheiß, Johan-Paul Stemplinger, *Hydraulic losses of a gearbox: CFD analysis and experiments* – Tribology international, Volume 66, pages 337-344, Elsevier DOI**:** 10.1016/j.triboint.2013.06.005

- 2013 *Franco Concli*, Carlo Gorla, *Influence of lubricant temperature, lubricant level and rotational speed on the churning power losses in an industrial planetary speed reducer: computational and experimental study* - International Journal of Computational Methods and Experimental Measurements, Volume 1, Issue 4, pages 353-366, Wessex institute of technology, UK DOI: 10.2495/CMEM-V1-N4-353-366

2014

- 2014 *Franco Concli*, Carlo Gorla, *A CFD analysis of the oil squeezing power losses of a gear pair*, - International Journal of Computational Methods and Experimental Measurements, Volume 2, Issue 2, pages 157-167, Wessex institute of technology, UK, DOI: 10.2495/CMEM-V2-N2-157-167

- 2014 *Concli Franco*, Conrado Edoardo, Gorla Carlo, *Analysis of power losses in an industrial speed reducer - Measurements and computational fluid dynamics calculations*, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology. Volume 228, Issue 1, pages 11-21, January 2014, DOI**:** 10.1177/1350650113496980

- 2014 *Franco Concli*, Carlo Gorla, Augusto Della Torre, Gianluca Montenegro, *Windage Power Losses of Ordinary Gears: Different CFD Approaches Aimed to the Reduction of the Computational Effort*, Lubricants, Volume 2, Issue 4, Pages 162-176, DOI:10.3390/lubricants2040162

2015

- 2015 *Franco Concli*, Carlo Gorla, Augusto Della Torre, Gianluca Montenegro, *Churning power losses of ordinary gears: a new approach based on the internal fluid dynamics simulations*, Lubrication Science, Volume 27, Issue 5, Pages 313-326 DOI:10.1002/ls.1280

- 2015 *Franco Concli*, Jan Coenen, *Low-loss gears for high efficiency precision planetary gearboxes: Influence of the gear design on the meshing and the churning power losses*, Getriebe aktuell, www.getriebe-aktuell.de [Vol 8, pp 20-28, 2015]

2016

- 2016 *Franco Concli*, *Thermal and efficiency characterization of a low-backlash planetary gearbox: an integrated numerical-analytical prediction model and its experimental validation*, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 230(8), 996-1005 DOI: 10.1177/1350650115622363

- 2016 *Franco Concli*, *Pressure distribution in small hydrodynamic journal bearings considering cavitation: a numerical approach based on the open-source CFD code OpenFOAM®*, Lubrication Science, 26(6), 329-347 DOI: 10.1002/ls.1334

- 2016 *Franco Concli*, Carlo Gorla, Augusto Della Torre, Gianluca Montenegro, *A new integrated approach for the prediction of the power losses of gears: development of a mesh-handling algorithm to reduce the CFD simulation time* Advances in Tribology – Hindawi 2016 2957151 DOI: 10.1155/2016/2957151

- 2016 *Franco Concli*, Carlo Gorla, *Numerical Modeling Of The Power Losses In Geared Transmissions: Windage, churning and cavitation simulations with a new integrated approach that drastically reduces the computational effort,* Tribology international, Elsevier, 103, 58-68 DOI: 10.1016/j.triboint.2016.06.046

- 2016 *Franco Concli*, Carlo Gorla, *Windage, Churning And Pocketing Power Losses Of Gears: Different Modeling Approaches For Different Goals*, Forschung im Ingenieurwesen, 80, 85-99, DOI: 10.1007/s10010-016-0206-9

2017

2018

- 2017 *Franco Concli*, *Low-loss gears precision planetary gearboxes: reduction of the load dependent power losses and efficiency estimation through a hybrid analytical-numerical optimization tool | [Hochleistungs- und Präzisions-Planetengetriebe: Effizienzschätzung und Reduzierung der lastabhängigen Leistungsverluste und durch ein hybrides analytisch-numerisches Optimierungswerkzeug*], Forschung im Ingenieurwesen/Engineering Research 81(4), pp. 395-407, DOI: 10.1007/s10010-017-0242-0
- 2017 *Franco Concli*, Carlo Gorla, *Numerical modeling of the churning power losses in planetary gearboxes: an innovative partitioning-based meshing methodology for the application of a computational-effort reduction strategy to complex gearbox configuration,* Lubrication Science, 29(7), pp. 455-474, DOI: 10.1002/ls.1380
- 2017 Carlo Gorla, Francesco Rosa, Edoardo Conrado, Franco Concli, *Bending fatigue strength of case carburized and nitrided gear steels for aeronautical applications*, International Journal of Applied Engineering Research 12(21), pp. 11306-11322
- 2018 *Franco Concli*, *Austempered Ductile Iron (ADI) for gears: Contact and bending fatigue behavior*, Procedia Structural Integrity, Vol. 8, pp. 14-23, DOI: 10.1016/j.prostr.2017.12.003
- 2018 Carlo Gorla, Edoardo Conrado, Francesco Rosa, Franco Concli, *Contact and bending fatigue behavior of austempered ductile iron gears*, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 232(6), pp. 998-1008 DOI: 10.1177/0954406217695846
- 2018 *Franco Concli*, Luca Cortese, Renato Vidoni, Filippo Nalli, Giovanni Carabin, *A mixed FEM and lumped-parameter dynamic model for evaluating the modal properties of planetary gearboxes*, Journal of Mechanical Science and Technology 32(7), pp. 3047-3056 DOI: 10.1007/s12206-018-0607-9
- 2018 *Franco Concli*, *Austempered Ductile Iron (ADI) for gears: Contact and bending fatigue behavior*, Procedia Structural Integrity, Vol. 8, pp. 14-23, DOI: 10.1016/j.prostr.2017.12.003

2019

- 2018 *Franco Concli*, Andrea Gilioli, *Numerical and experimental assessment of the static behavior of 3D printed reticular Al structures produced by Selective Laser Melting: progressive damage and failure*, Procedia Structural Integrity, Vol. 12, pp. 204-212, DOI: 10.1016/j.prostr.2018.11.094
- 2019 *Franco Concli*, Andrea Gilioli, *Numerical and experimental assessment of the mechanical properties of 3D printed 18-Ni 300 steel trabecular structures produced by Selective Laser Melting – a lean design approach*, Virtual and Physical Prototyping, 14(3), pp. 267-276, DOI: 10.1080/17452759.2019.1565596
- 2019 *Franco Concli*, Andrea Gilioli, *Experimental - numerical assessment of ductile failure of AM SLM reticular structures made of Al A357*, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, DOI: 10.1177/0954406219832333 [in press]
- 2019 *Concli Franco*, Gorla Carlo, Rosa Francesco, Conrado Edoardo, *Effect of the static pressure on the power dissipation of gearboxes,* Lubrication Science, 31(8), pp. 347-355, DOI: 10.1002/ls.1476
- 2019 *Franco Concli*, Massimiliano Gobbi, Carlo Gorla, *Aerodynamic Study of Motorcycle Racing Wheels: A Performance Evaluation Based on Numerical CFD Simulations*, International Journal of Computational Methods and Experimental Measurements, Wessex institute of technology, UK, 7(3), pp. 257-284, DOI: 10.2495/CMEM-V7-N3-275-284

2020

- 2020 *Franco Concli*, Lorenzo Maccioni, Carlo Gorla, *Development of a CFD Simulation Tool for Lubrication Studies on Cycloidal Gear Sets,* International Journal of Computational Methods and Experimental Measurements 8(3), pp.220-232, Wessex institute of technology, UK, DOI: 10.2495/CMEM-V8-N3-243-251
- 2020 *Franco Concli*, Carlo Gorla, *Non-Newtonian CFD modelling of a valve for mud pumps*, International Journal of Computational Methods and Experimental Measurements, Wessex institute of technology, UK, 8(1), pp. 61-69, DOI: 10.2495/CMEM-V8-N1-61-69
- 2020 *Franco Concli*, Lorenzo Maccioni, *Fracture Locus of a Cor-Ten Weathering Steel: Experimental-Numerical Calibration,* International Journal of Computational Methods and Experimental Measurements, 8(3), pp.243-251, Wessex institute of technology, UK, DOI: 10.2495/CMEM-V8-N3-243-251
- 2020 *Franco Concli*, Christian T. Schaefer, Christof Bohnert, *Innovative Meshing Strategies for Bearing Lubrication Simulations*, Lubricants, 8(4), 46, pp., DOI: 10.3390/lubricants8040046
- 2020 Marco N. Mastrone, j A. Hartono, Valery Charnoray, *Franco Concli*, *Oil distribution and churning losses of gearboxes: Experimental and numerical analysis*, Tribology International, Elsevier, 151, 106496, DOI: 10.1016/j.triboint.2020.106496
- 2020 Fraccaroli Lorenzo, *Franco Concli*, *Introduction of Open-Source Engineering Tools for the Structural Modeling of a Multilayer Mountaineering Ski under Operation*, Applied Sciences, 10(15), 5310, DOI:10.3390/app10155310

- 2020 Alomar Zaki, *Franco Concli*, *A Review of the Selective Laser Melting Lattice Structures and Their Numerical Models*, Advanced Engineering Materials, 22(12), 2000611, DOI: 10.1002/adem.202000611

- 2020 Nezzi Chiara, *Franco Concli*, *Hybrid Transmissions for the Optimization of the Efficiency of Internal Combustion Engines*, International Journal of Transport Development and Integration, 4(4), pp. 321-329, Wessex institute of technology, UK, DOI: 10.2495/TDI-V4-N4-321-329

- 2020 Nalli Filippo, Luca Cortese, *Franco Concli*, *Ductile damage assessment of Ti6Al4V, 17-4PH and AlSi10Mg for additive manufacturing*, Engineering Fracture Mechanics, 241, 107395 DOI: 10.1016/j.engfracmech.2020.107395

- 2020 Luca Colombo, Claudio Sbarufatti, Luca Dal Bosco, Davide Bortolotti, Michal Dziendzikowski, Krzystof Dragan, *Franco Concli*, Marco Giglio, *Numerical and experimental verification of an inverse-direct approach for load and strain monitoring in aeronautical structures*, Structural Control and Health Monitoring, 2020; 28 (2), e2657 , DOI: 10.1002/stc.2657

- 2020 *Franco Concli*, Journal Bearing: *An Integrated CFD-Analytical Approach for the Estimation of the Trajectory and Equilibrium Position*, Applied Sciences, 10(23), 8573; doi:10.3390/app10238573

- 2020 Lorenzo Maccioni, *Franco Concli*, *Computational fluid dynamics applied to lubricated mechanical components: Review of the approaches to simulate gears, bearings, and pumps*, Applied Sciences, 10(24),8810, pp. 1-29, DOI: 10.3390/app10248810

2021

- 2021 *Franco Concli*, Andrea Gilioli, Filippo Nalli, *Experimental–numerical assessment of ductile failure of Additive Manufacturing selective laser melting reticular structures made of Al A357*, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, DOI: 10.1177/0954406219832333

- 2021 Riccardo Gerosa, Barbara Rivolta, Carlo Gorla, *Franco Concli*, *Cyclic behavior and fatigue resistance of AISI H11 and AISI H13 tool steels*, J Engineering Failure Analysis, 121, 105096 DOI: 10.1016/j.engfailanal.2020.105096

- 2021 Nalli Filippo, Luca Cortese, *Franco Concli*, *Ductile damage assessment of Ti6Al4V, 17-4PH and AlSi10Mg for additive manufacturing*. Engineering Fracture Mechanics, 241, art. no. 107395,

- 2021 *Franco Concli*, *Tooth Root Bending Strength of Gears: Dimensional Effect for Small Gears Having a Module below 5 mm*. Appl. Sci. 2021, 11, 2416. DOI:/10.3390/app11052416

- 2021 Bonaiti Luca, Ahmed Bayoumi Mahmoud Bayoumi, *Franco Concli*, Francesco Rosa, Carlo Gorla, *Gear root bending strength: a comparison between Single Tooth Bending Fatigue Tests and meshing gears.* Journal of Mechanical Design, 143(10),103402, DOI:/10.1115/1.4050560

- 2021 *Concli, Franco*; Pierri, L.; Sbarufatti, C. *A model-based SHM strategy for gears-development of a hybrid FEM-analytical approach to investigate the effects of surface fatigue on the vibrational spectra of a back-to-back test rig*. Appl. Sci. 2021, 11, 2026. DOI:10.3390/app11052026

- 2021 *Concli, F*., Bonaiti, L. Gerosa, R., Cortese, L., Nalli, F., Rosa, F., Gorla, C. *Bending Fatigue Behavior of 17-4 PH Gears Produced by Additive Manufacturing*. Appl. Sci. 2021, 11, 3019. DOI:10.3390/app11073019

- 2020 *Franco Concli*, Carlo Gorla, *Dynamic modeling of gears: An innovative hybrid FEM-analytical approach*, International Journal of Computational Methods and Experimental Measurements 9(2), 117-125, Wessex institute of technology, UK

- 2021 *Concli, F.,* Kolios, A. *Preliminary Evaluation of the Influence of Surface and Tooth Root Damage on the Stress and Strain State of a Planetary Gearbox: An Innovative Hybrid Numerical–Analytical Approach for Further Development of Structural Health Monitoring Models*. Computation 2021, 9, 38. DOI:10.3390/computation9030038

- 2021 Marco N Mastrone, *Franco Concli*, *Power Losses of Spiral Bevel Gears: An Analysis based on Computational Fluid Dynamics,* Frontiers in Mechanical Engineering 7,655266, https://doi: 10.3389/fmech.2021.655266

- 2021 Zaki Alomar, *Franco Concli, Compressive Behavior Assessment of a Newly Developed Circular Cell-based Lattice Structure,* Materials & Design, 2021, 205, 109716, https://10.1016/j.matdes.2021.109716

- 2021 Luca Bonaiti, Francesco Rosa, Prasad Mahendra, *Franco Concli*, Carlo Gorla, *Gear root bending strength: statistical treatment of Single Tooth Bending Fatigue tests results*, Forschung im Ingenieurwesen, https://doi.org/10.1007/s10010-021-00567-7

- 2021 Prasad Mahendra, Stefano Foletti, Luca Bonaiti, *Franco Concli*, Carlo Gorla, Stefano Beretta, *Mode III threshold under Rolling Contact Fatigue and 1 development of a test gearbox for planet gears*, Forschung im Ingenieurwesen [in press]

- 2021 Marco N. Mastrone, *Franco Concli*, *CFD simulation of grease lubrication: Analysis of the power losses and lubricant flows inside a back-to-back test rig gearbox*, Journal of Non-Newtonian Fluid Mechanics Volume 297, 104652 DOI:10.1016/j.jnnfm.2021.104652

- 2021 Marco N. Mastrone, Franco Concli, *CFD simulations of gearboxes: implementation of a mesh clustering algorithm for efficient simulations of complex system's architectures*, International Journal of Mechanical and Materials Engineering, 2021, 16(1), 12 https:// 10.1186/s40712-021-00134-6

- 2021 Marco Nicola Mastrone, Lorenzo Fraccaroli, *Franco Concli*, H*igh and low-cycle-fatigue properties of 17–4 PH manufactured via selective laser melting in as-built, machined and hipped conditions*, International Journal of Computational Methods and Experimental Measurements 9(3), pp. 249-260, https://doi.org10.2495/CMEM-V9-N3-249-260

- 2021 *Franco Concli,* Augusto Della Torre, I*mpact of the lacks of fusion induced by additive manufacturing on the lubrication of a gear flank*, Lubricants 9(8),83 https://10.3390/lubricants9080083

- 2021 *Franco Concli*, Lorenzo Fraccaroli, Lorenzo Maccioni, *Gear root bending strength: A new multiaxial approach to translate the results of single tooth bending fatigue tests to meshing gears*, Metals 11(6),863, DOI:10.3390/met11060863

- 2021 Lorenzo Maccioni, Valery G. Charnoray, Marco N. Mastrone, Christof Bohnert, *Franco Concli, Study of the impact of aeration on the lubricant behavior in a tapered roller bearing: Innovative numerical modelling and validation via particle image velocimetry*, Tribology International, Volume 165, 2021, 107301, https://doi.org/10.1016/j.triboint.2021.107301

- 2021 *Franco Concli*, Lorenzo Fraccaroli, Filippo Nalli, Luca Cortese, *High and low-cycle-fatigue properties of 17–4 PH manufactured via selective laser melting in as-built, machined and hipped conditions*, Progress in Additive Manufacturing, DOI:10.1007/s40964-021-00217-y

- 2021 Lorenzo Maccioni, Luca Bonaiti, *Franco Concli*, *Early crack propagation in Single Tooth Bending Fatigue: combination of finite element analysis and critical-planes fatigue criteria*, Metals 2021, 11(11), 1871; https://doi.org/10.3390/met11111871

2022

- 2022 Lorenzo Maccioni, Valery G. Charnoray, Christof Bohnert, *Franco Concli*, *Particle Image Velocimetry measurements inside a tapered roller bearing with an outer ring made of sapphire: design and operation of an innovative test rig*, Tribology International, Volume 165, January 2022, https://doi.org/10.1016/j.triboint.2021.107301

- 2022 Marco Nicola Mastrone, *Franco Concli*, *A Multi Domain Modeling Approach for the CFD Simulation of Multi-Stage Gearboxes*, Energies, Volume 15, 837, January 2022, https:// doi.org/10.3390/en15030837

- 2022 Niknafs, S., Silani, M., *Concli, F*., Aghababaei, R. *A coarse-grained concurrent multiscale method for simulating brittle fracture* 254-255, art. no. 111898, . DOI: 10.1016/j.ijsolstr.2022.111898

- 2022 Rao, P.M., Foletti, S., Bonaiti, L., *Concli, F.,* Gorla, C., Beretta, S. *Mode III threshold under Rolling Contact Fatigue and development of a test gearbox for planet gears: Conference Proceedings [Mode III Rißausbreitung: Entwicklung eines Testgetriebes für Planetenräder: Tagungsband]* 86 (3), pp. 483-490.DOI: 10.1007/s10010-021-00562-y

- 2022 Bonaiti, L., Rosa, F., Rao, P.M., *Concli, F*., Gorla, C. *Gear root bending strength: statistical treatment of Single Tooth Bending Fatigue tests results: Conference Proceedings [Zahnfußbiegefestigkeit: Statistische Behandlung der Ergebnisse von den STBF-Versuchen]* 86 (3), pp. 251-258. DOI: 10.1007/s10010-021-00567-7

- *2022 Concli, F., Numerical Study of the Impact of Shot Peening on the Tooth Root Fatigue Performances of Gears Using Critical Plane Fatigue Criteria* 12 (16), art. no. 8245. DOI: 10.3390/app12168245

- 2022 de Paula Monteiro, R., Lucatto Marra, A., Vidoni, R., Garcia, C., *Concli, F. A Hybrid Finite Element Method–Analytical Model for Classifying the Effects of Cracks on Gear Train Systems Using Artificial Neural Networks* 12 (15), art. no. 7814, DOI: 10.3390/app12157814

- 2022 *Concli, F.,* Maccioni, L., Fraccaroli, L., Cappellini, C. *Effect of Gear Design Parameters on Stress Histories Induced by Different Tooth Bending Fatigue Tests: A Numerical-Statistical Investigation* 12 (8), art. no. 3950, DOI: 10.3390/app12083950

- 2022 Mastrone, M.N., *Concli, F. A Multi Domain Modeling Approach for the CFD Simulation of Multi-Stage Gearboxes* 15 (3), art. no. 837, DOI: 10.3390/en15030837

- 2022 *Concli, F*., Fraccaroli, L., Nalli, F., Cortese, L. *High and low-cycle-fatigue properties of 17–4 PH manufactured via selective laser melting in as-built, machined and hipped conditions* 7 (1), pp. 99-109. DOI: 10.1007/s40964-021-00217-y

- 2022 Maccioni, L., Chernoray, V.G., Bohnert, C., *Concli, F. Particle Image Velocimetry measurements inside a tapered roller bearing with an outer ring made of sapphire: Design and operation of an innovative test rig* 165, art. no. 107313,DOI: 10.1016/j.triboint.2021.107313

2023

- 2023 *Concli, F.,* Molinaro, M., *Design For Additive Manufacturing – Material Characterization And Geometrical Optimization* 10 (2), pp. 146-157. DOI: 10.2495/CMEM-V10-N2-146-157

- 2023 Maccioni, L., *Concli, F*., Blagojevic, M. *A new three-stage gearbox concept for high reduction ratios: Use of a nested-cycloidal architecture to increase the power density,* Mechanism and Machine Theory 181, 105203 DOI: 10.1016/j.mechmachtheory.2022.105203

- 2023 Alomar, Z., Maccioni, L., *Concli, F. Development and Implementation of Element Deletion Algorithm into an Open-Source Software Based on the Fracture Locus of Materials*, Materials 16(1), 187 DOI: 10.3390/ma16010187

- 2023 Mastrone, M.N., *Concli, F. Numerical Modeling of Fluid's Aeration: Analysis of the Power Losses and Lubricant Distribution in Gearboxes*, Journal of Applied and Computational Mechanics 9(1), pp. 83-94 DOI: 10.22055/jacm.2022.40666.3625

- 2023 Wingertszahn, P., Koch, O., Maccioni, L., *Concli, F,* Sauer, B., *Predicting Friction of Tapered Roller Bearings with Detailed Multi-Body Simulation Models*, Lubricants 11(369), pp. 83-94 DOI: 10.3390/ lubricants11090369

- 2023 Maccioni, L., Chernoray, V., *Concli, F., Fluxes in a full-flooded lubricated Tapered Roller Bearing: Particle Image Velocimetry measurements and Computational Fluid Dynamics simulations*, Trib. Int. 188, 108824, DOI: 10.1016/j.triboint.2023.108824

- 2023 Mastrone, M.N., Hildebrand, L., Paschold, C., Lohner, T., *Stahl, K., Concli, F., Numerical and Experimental Analysis of the Oil Flow in a Planetary Gearbox*, Applied Sciences, DOI: 10.3390/app13021014

- 2023 *Concli, F.,* Mastrone, M.N., Latest advancements in the lubricant simulations of geared systems: a technology ready for industrial applications | Neuste Fortschritte bei der Schmierstoffsimulation von Getriebesystemen: eine industrietaugliche Technologie, Forschung im Ingenieurwesen/Engineering research, DOI: 10.1007/s10010-023-00698-z

- 2023 Alomar, Z., *Concli, F., A New Phenomenological Model for the Crushing Failure Mechanism Lattice Structures*, Advanced Engineering Materials, 25(14), 2201695, DOI: 10.1002/adem.202201695

- 2023 *Concli, F*., Mastrone, M.N., *Advanced Lubrication Simulations of an Entire Test Rig: Optimization of the Nozzle Orientation to Maximize the Lubrication Capability*, Lubricants 11(7), DOI: 10.3390/lubricants11070300

- 2023 *Concli, F.*, Gerosa, D., Panzeri, D., Fraccaroli, L., *High and low cycle fatigue properties of selective laser melted AISI 316L and AlSi10Mg*, International Journal of Fatigue 177, 107931, DOI: 10.1016/j.ijfatigue.2023.107931

National Journals

- 2011 Carlo Gorla, Franco Concli, Rodolfo Arigoni, Mauro Musolesi, *Riduttori epicicloidali di precisione a gioco ridotto e alta efficienza* – Organi di trasmissione, OT_2011, Volume 2, pages 040-044, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2012 Franco Concli, Carlo Gorla, *Perdite per sbattimento in un riduttore epicicloidale industriale* – Organi di trasmissione, OT_2012, Volume 001, pages 044-048, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2012 Carlo Gorla, Franco Concli, Karsten Stahl, Klaus Michaelis, Hansjörg Schultheiß, Johan-Paul Stemplinger, *Simulazione CFD delle perdite per sbattimento di una trasmissione* - Organi di trasmissione, OT_2012, Volume 1, pages 044-048, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2013 Franco Concli, Carlo Gorla, *Efficienza delle trasmissioni una nuova metodologia basata sulla CFD* – Organi di trasmissione, OT_2013, Volume 3, pages 024-026, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2013 Franco Concli, Carlo Gorla, *Perdite idrauliche di una trasmissione ad ingranaggi: analisi numerica e test sperimentali* – Organi di trasmissione, OT_2013, Volume 9, pages 032-033, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2013 Franco Concli, *Analisi degli elementi volventi di un cuscinetto* – Organi di trasmissione, OT2013, Volume 11 - Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, Carlo Gorla, *Studio della lubrificazione di riduttori ad ingranaggi attraverso simulazioni fluidodinamiche*, OT2014, Volume 1, pages 036-038, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, *ORGANI DI MACCHINE: collegamenti a vite parte 1*, OT2014, Volume 1, pages 040-043, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, *ORGANI DI MACCHINE: collegamenti a vite parte 2*, OT2014, Volume 2, pages 042-044, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, *ORGANI DI MACCHINE: alberi parte 1*, OT2014, Volume 3, pages 034-037, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2014 Franco Concli, *ORGANI DI MACCHINE: alberi parte 2*, OT2014, Volume 4, pages 038-040, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, *ORGANI DI MACCHINE: Collegamenti albero mozzo - parte 1*, OT2014, Volume 5, pages 034-038, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2014 Franco Concli, *ORGANI DI MACCHINE: Collegamenti albero mozzo - parte 2*, OT2014, Volume 6, pages 036-038, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2015 Franco Concli, *Profilo di pressione nei cuscinetti idrodinamici un nuovo approccio basato sulla CFD*, OT2015, Volume 7, pages 028-031, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2016 Franco Concli, *Ingranaggi ad elevata efficienza per riduttori epicicloidali di precisione – studio dell'influenza delle perdite per strisciamento e per sbattimento*, OT2016, Volume 7, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2017 Franco Concli, *ADI: un materiale alternativo alla ghisa sferoidale nitrurata per la produzione di ingranaggi*, Fonderia, F2017, Volume 3, pages 10-14, Tecniche Nuove, Milan, ISSN: 0015-6078

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: cuscinetti*, PI2017, Volume 1, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: forzamento*, PI2017, Volume 2, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: alberi I*, PI2017, Volume 3, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: alberi II*, PI2017, Volume 4, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: Collegamenti indiretti*, PI2017, Volume 5, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: Collegamenti a vite*, PI2017, Volume 6, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: Saldature*, PI2017, Volume 7, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: Molle elicoidali*, PI2017, Volume 8, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2017 Franco Concli, *QUADERNI DI PROGETTAZIONE: Cuscinetti idrodinamici*, PI2017, Volume 9, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, *QUADERNI DI PROGETTAZIONE: Cinghie – parte I*, PI2018, Volume 3, pp. 43-56-59, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, *QUADERNI DI PROGETTAZIONE: Cinghie – parte II*, PI2018, Volume 4, pp. 56-59, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018, Franco Concli, Carlo Gorla, *CFD Simulation of Power Losses and Lubricant Flows in Gearboxes*, GEARSolutions, March 2018

- 2018 Franco Concli, *QUADERNI DI PROGETTAZIONE: Recipienti in pressione*, PI2018, Volume 6, pp. 058-062, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, Marco Bietresato, Sandro Calligaro, *Le trasmissioni CVT ibride: una possibilità concreta per ottimizzare l'efficienza dei motori a combustione interna*, OT2018, Volume 6, pp. 28-32, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2018 Franco Concli, Marco Bietresato, Fabrizio Mazzetto, *Come caratterizzare l'efficienza delle macchine agricole? Qualche spunto di riflessione per implementare insieme un sistema integrale di prova*, PI2018, Volume 5, pp. 061-065, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, *QUADENI DI PROGETTAZIONE: ingranaggi – parte 1*, PI2018, Volume 7, pp. 48-52, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, *QUADENI DI PROGETTAZIONE: ingranaggi – parte 2*, PI2018, Volume 8, pp. 36-40, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: frizioni centrifughe - parte I*, PI2018, Volume 9, pp. 50-54, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2018 Franco Concli, *Modellazione numerica del comportamento di reticoli prodotti mediante manifattura additiva*, PI2018, Volume 10, pp. 100-103, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: frizioni centrifughe - parte II*, PI2019, Volume 1, pp. 50.54, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: manifattura additiva - parte I*, PI2019, Volume 2, pp. 44-48, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: manifattura additiva - parte II*, PI2019, Volume 3, pp. 50-54, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: pannelli sandwich*, PI2019, Volume 5, pp. 48-51, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: fatica – parte I*, PI2019, Volume 7, pp. 48-51, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2019 Franco Concli, *QUADERNI DI PROGETTAZIONE: fatica – parte II*, PI2019, Volume 8, pp. 48-51, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: la fatica oligociclica*, PI2020, Volume 1, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: i giunti*, PI2020, Volume 2, pp.48-50, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: FEM open-source,* PI2020, Volume 4, pp. 26-29, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: le funi*, PI2020, Volume 3, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: i contatti,* PI2020, Volume 6, pp.50-52, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *QUADERNI DI PROGETTAZIONE: meccanica della frattura,* PI2020, Volume 5, pp.50-52 50-53., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *Depressurizzazione per migliorare l'efficienza degli ingranaggi*, OT2020, Volume 7, pp 38-42., Tecniche Nuove, Milan, ISSN: 0030-4905

- 2020 Franco Concli, Lorenzo Maccioni, *QUADERNI DI PROGETTAZIONE: calibrazione del modello di danneggiamento duttile di un acciaio CORTEN – procedura numerico-sperimentale,* PI2020, Volume 7, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2020 Franco Concli, *Ingranaggi… in plastica?!*, OT2020, Volume 8, pp.038-040, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2020 Franco Concli, *Nuovo approccio ibrido per la modellazione degli ingranaggi: un modello per il monitoraggio strutturale?!*, OT2020, Volume 8, pp.044-049, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2020 Franco Concli, *Sviluppo di uno strumento per la simulazione della fluidodinamica di un riduttore cicloidale*, OT2020, Volume 10, pp.032-037, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2020 Franco Concli, Lorenzo, *QUADERNI DI PROGETTAZIONE: il metodo delle forze per la soluzione di strutture iperstatiche,* PI2020, Volume 8, pp.058-062, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2020 Franco Concli, Lorenzo Fraccaroli, *QUADERNI DI PROGETTAZIONE: Progettazione avanzata di uno sci da gara,* PI2020, Volume 10, pp.054-060, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Modellazione numerica di strutture reticolari realizzate mediante Selective Laser Melting,* PI2021, Volume 01, pp. 42-47, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: modellazione dinamica degli ingranaggi mediante un approccio ibrido analitico-FEM… una base per il monitoraggio strutturale?,* PI2021, Volume 01, pp. 42-47, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *Equilibrio di un cuscinetto idrodinamico: un approccio semplificato che accoppia CFD e modellazione analitica*, OT2021, Volume 4, pp.050-057, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2021 Franco Concli, *Strategia di monitoraggio strutturale degli ingranaggi basata su un modello ibrido analitico-numerico*, OT2021, Volume 2, pp.046-052, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Modellazione numerica di strutture reticolari realizzate mediante Selective Laser Melting,* PI2021, Volume 01, pp., Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Equilibrio di un cuscinetto idrodinamico - un approccio semplificato che accoppia CFD e modellazione analitica,* PI2021, Volume 04, pp.050-057, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Un approccio snello per lo studio della risposta meccanica di strutture trabecolari in acciaio 18-Ni 300 stampate in 3D mediante Selective Laser Melting,* PI2021, Volume 03, pp.042-048, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Criteri di fatica multiassiale basati sul piano critico,* PI2021, Volume 05, pp.046-049, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *Strategia Di Monitoraggio Strutturale Degli Ingranaggi Basata Su Un Modello Ibrido Analitico-Numerico*, OT2021, Volume 5, pp046-052., Tecniche Nuove, Milan, ISSN: 0030-4905
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: sviluppo di un algoritmo per il mesh clustering volto a ridurre l'onere computazionale delle simulazioni CFD applicate ai riduttori ad ingranaggi,* PI2021, Volume 06, pp.052-059, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Resistenza alla flessione a piede dente degli ingranaggi: effetto dimensionale per ingranaggi con un modulo inferiore a 5 mm,* PI2021, Volume 07, pp.053-060, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, QUADERNI DI PROGETTAZIONE: Tecnologie Funiviarie, PI2021, Volume 008, pp.056-060, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE: Resistenza alla flessione a piede dente degli ingranaggi: effetto dimensionale per ingranaggi con un modulo inferiore a 5 mm, PI2021, Volume 009, pp., Tecniche Nuove, Milan, ISSN: 0392-4823,* PI2021, Volume 08, pp.053-060, Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE*: un modello ibrido FEM – parametri concentrati per valutare il comportamento vibro-acustico dei riduttori planetari , PI2021, Volume 010, pp., Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Franco Concli, *QUADERNI DI PROGETTAZIONE*: verifica di componenti sottoposti a vibrazioni, PI2021, Volume 011, pp., Tecniche Nuove, Milan, ISSN: 0392-4823
- 2021 Marco N. Mastrone, Franco Concli, Simulazione dell'aerazione nei sistemi lubrificati, OT2021, Volume 11, pp.30-35, Tecniche Nuove, Milan, ISSN: 0030-4905
- 2022 Franco Concli, Zaki Alomar, Cristian Cappellini, *QUADERNI DI PROGETTAZIONE*: Sviluppo di un algoritmo di cancellazione degli elementi per un software open source agli elementi finiti, PI2022, Volume 001, pp.052-054, Tecniche Nuove, Milan, ISSN: 0392-4823, PI2021,

- 2022 Franco Concli, *ADDITIVE MANUFACTURING per la produzione di componenti meccanici?,* OT2022, Volume, pp., Tecniche Nuove, Milan, ISSN: 0030-4905

- 2022 Franco Concli, *QUADERNI DI PROGETTAZIONE: gli attuatori a vite,* OT2022, Volume, pp., Tecniche Nuove, Milan, ISSN: 0030-4905

- 2022 Franco Concli, *QUADERNI DI PROGETTAZIONE: la caratterizzazione dei materiali,* OT2022, Volume, pp., Tecniche Nuove, Milan, ISSN: 0030-4905

- 2023 Franco Concli, *QUADERNI DI PROGETTAZIONE: la meccanica della frattura ,* OT2023, Volume, pp., Tecniche Nuove, Milan, ISSN: 0030-4905

- 2023 Franco Concli, Lorenzo Maccioni, NESTED: Un nuovo concetto riduttore a tre stadi con elevato rapporto di riduzione basato su un'architettura cicloidale annidata – PARTE 1, OT2023, Volume 005, pp.028-039, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2023 Franco Concli, Lorenzo Maccioni, NESTED: Un nuovo concetto riduttore a tre stadi con elevato rapporto di riduzione basato su un'architettura cicloidale annidata – PARTE 2, OT2023, Volume 006, pp.034-038, Tecniche Nuove, Milan, ISSN: 0030-4905

- 2023 Franco Concli, Taghizadeh Seyedahmad, *QUADERNI DI PROGETTAZIONE*: Comportamento meccanico di strutture sandwich in bio-composito sottoposte a compressione quasi-statica, PI2023, Volume 008, pp.054-059, Tecniche Nuove, Milan, ISSN: 0392-4823

- 2023 Franco Concli, *QUADERNI DI PROGETTAZIONE*: simulazioni di dinamica molecolare, PI2023, Volume 006, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2023 Franco Concli, *QUADERNI DI PROGETTAZIONE*: il machine learning nell'ingegneria, PI2023, Volume 007, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2023 Franco Concli, *QUADERNI DI PROGETTAZIONE*: Resistenza alla penetrazione quasi-statica di piastre stampate in 3D in materiale composito, PI2023, Volume 009, pp050-058., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2023 Franco Concli, *QUADERNI DI PROGETTAZIONE*: SPH si, SPH no? , PI2024, Volume 001, pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2024 Franco Concli, *QUADERNI DI PROGETTAZIONE*: Il cubo di Rubik , PI2024, Volume , pp., Tecniche Nuove, Milan, ISSN: 0392-4823

- 2024 Franco Concli, Pagliari Lorenzo, QUADERNI DI PROGRETTAZIONE: Confronto dei criteri di fatica a basso numero di cicli per la previsione della vita utile dell'acciaio AISI 316, PI2024 Volume , pp., Tecniche Nuove, Milan, ISSN: 0392-4823

Conferences

- 2010 Carlo Gorla, Franco Concli, Rodolfo Arigoni, Enzo Cognini, Mauro Musolesi, *Planetary speed reducers: backlash, stiffness, efficiency* - International Conference on Gears 2010, VDI BERICHTE 2108; pages 685-696, Munich, Germany, ISBN 9783180921082, ISSN 0083-5560 (https://getinfo.de/app/Planetary-Speed-Reducers-Efficiency-Backlash-Stiffness/id/BLCP%3ACN077519553)

- 2011 *Franco Concli*, Carlo Gorla, *Churning power losses in planetary speed reducer: computational-experimental analysis* - International CAEconference 2011, Verona, Italy (http://meeting2011.enginsoft.it/)

- 2011 *Franco Concli*, Carlo Gorla, *Analisi degli effetti delle approssimazioni dello spettro reale di carico sul danneggiamento delle singole dentature* – Associazione Italiana Analisi delle Sollecitazioni, AIAS 2011, Palermo, Italy, ISBN:9788895272856 (http://web-archive-it.com/it/a/aias2011.it/2012-11-10_623183_6/40_Convegno_Nazionale_AIAS_Palermo/)

- 2012 *Franco Concli*, Carlo Gorla, *Analysis of the oil squeezing power losses of a spur gear by mean of CFD simulations* – Proceedings of the ASME 2012 11th Biennal Conference in Engineering Systems Design and Analysis ESDA2012, Volume 2, pages 177-184 Nantes, France
DOI**:** 10.1115/ESDA2012-82591

- 2012 Carlo Gorla, Francesco Rosa, Franco Concli, Horatio Albertini, *Bending fatigue strength of innovative materials for wind turbines: Effect of surface coatings*, ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE2012), Volume 7, Issue PARTS A, B, C, D, pages 3141-3147, Houston (TX), USA, DOI**:** 10.1115/IMECE2012-86513

- 2012 *Franco Concli*, Carlo Gorla, *Computational and experimental analysis of the churning power losses in an industrial planetary speed* – 9th International Conference on Advances in Fluid Mechanics – Advances in Fluid Mechanics IX, AFM2012, (WIT Transactions on Engineering Sciences), Volume 74, pages 287-298, Wessex institute of technology, UK DOI**:** 10.2495/AFM120261

- 2012 *Franco Concli*, Carlo Gorla, *Oil squeezing power losses of a gear pair: a CFD analysis* – 9th International Conference on Advances in Fluid Mechanics – Advances in Fluid Mechanics IX, AFM2012, (WIT Transactions on Engineering Sciences), Volume 74, pages 37-48, Wessex institute of technology, UK DOI**:** 10.2495/AFM120041

- 2012 Franco Concli, Carlo Gorla, *CFD Simulations of windage losses of a gearbox,* International CAEConference 2012, Pacengo, VR, Italy (http://meeting2012.enginsoft.it/)

- 2013 Carlo Gorla, *Franco Concli*, Karsten Stahl, Bernd-Robert Höhn, Klaus Michaelis, Hansjörg Schultheiß, Johan-Paul Stemplinger, *Load independent power losses of ordinary gears: numerical and experimental analysis*, Proceedings of the 5th World Tribology Congress WTC2013, Torino, ISBN: 9788890818509

- 2013 Franco Concli, Carlo Gorla, *A new methodology for the prediction of the no-load losses of gears: CFD and experimental investigation of the efficiency of a planetary gearbox* – International Conference on Gears 2013, VDI BERICHTE 2199, Volume 2, pages 1125-1137, Munich, Germany, ISBN: 978-3-18-092199-0 (https://getinfo.de/app/A-new-methodology-for-the-prediction-of-the-no/id/BLCP%3ACN086055775)

- 2013 Augusto Della Torre, Franco Concli, Carlo Gorla, Gianluca Montenegro, *Analysis of the power losses in geared transmissions – measurements and CDF calculations based on open source codes*, Open source CFD International Conference 2013, Hamburg, Germany (http://www.opensourcecfd.com/conference2013/en/proceedings/proceedings-2013)

- 2013 Franco Concli, Carlo Gorla, *CFD analysis of the hydraulic losses of a gearbox: model validation and results,* International CAEConference 2013, Pacengo, VR, Italy (http://meeting2013.enginsoft.it/)

- 2014 Franco Concli, *Low-loss gears for high efficiency precision planetary gearboxes: influence of the gear design on the meshing and the churning power losses*, International Conference on Gears 2015, Munich, Germany

- 2014 *Franco Concli*, Carlo Gorla, *Analysis of the power losses in geared transmissions – Measurements and CFD calculations based on open source codes*, International Gear Conference 2014, Lyon, France (http://int-gear-conf14.sciencesconf.org)

- 2014 Franco Concli, *High efficiency, low backlash planetary speed reducer gearbox optimization by means of a multidisciplinary numerical approach*, International CAEConference 2014, Pacengo, VR, Italy (http://proceedings2014.caeconference.com)

- 2015 *Franco Concli*, Jan Coenen, *Low-loss gears for high efficiency precision planetary gearboxes: Influence of the gear design on the meshing and the churning power losses*, International Conference on Gear 2015, Munich, Germany (http://www.vdi-wissensforum.de/en/nc/angebot/detailseite/event/02TA210015/)

- 2015 Franco Concli, *Effect of the machining tolerances on the transmission error of planetary gearboxes: a numerical approach*, International CAEConference 2015, Pacengo, VR, Italy (http://proceedings2015.caeconference.com)

- 2016 Franco Concli, *Modellazione numerica dei flussi di lubrificante all'interno di un riduttore ad ingranaggi: determinazione della corretta lubrificazione di tutti i componenti meccanici*, AIAS 2016, Trieste, Italy

- 2017 Franco Concli, Carlo Gorla, *CFD simulation of power losses and lubricant flows in gearboxes,* AGMA Fall Technical Meeting 2017, USA

- 2017 Franco Concli, Carlo Gorla, *Numerical Modeling of the Churning Power Losses of Gears: an Innovative 3D Computational Tool Suitable for Planetary Gearbox Simulation,* International Conference on Gears 2017, Munich, Germany

- 2017 Carlo Gorla, Conrado Edoardo, Rosa Francesco, Franco Concli, *Austempered Ductile Iron (ADI) for Gears: manufacturing performances and tests,* International Conference on Gears 2017, Munich, Germany

- 2017 Franco Concli, *Austempered Ductile Iron (ADI) for gears: Contact and bending fatigue behavior*, AIAS 2017, Pisa, Italy

- 2018 Franco Concli, Bernasconi Andrea, Carlo Gorla, *Optimization of an innovative automatic valve geometry for concrete and drilling mud pump to avoid cavitation: non-Newtonian CFD modeling*, Advanced in fluid

mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2018 Franco Concli, Massimiliano Gobbi, Carlo Gorla, *Comparative study of the aerodynamic performances of motorcycle racing wheels using numerical CFD simulations*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2018 Franco Concli, Andrea Gilioli, *Numerical and experimental assessment of the static behavior of 3D printed reticular Al structures produced by Selective Laser Melting: progressive damage and failure*, AIAS 2018, Villa San Giovanni, Italy

- 2019 Franco Concli, Lorenzo Maccioni, Carlo Gorla, *Lubrication of gearboxes: CFD analysis of a cycloidal gear set*, Multiphase Flows 2019 (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK, 123, pp. 101-112, DOI: 10.2495/MPF190101

- 2019 Franco Concli, Lorenzo Maccioni, *Experimental-numerical calibration of the fracture locus of a weathering steel,* (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK, 124, pp. 219-227, DOI: 10.2495/MC190211

- 2019 Franco Concli, Carlo Gorla, *Dynamic models for structural health monitoring of gearboxes,* International Conference on Gears 2019, Munich, Germany

- 2019 Franco Concli, Lorenzo Maccioni, Carlo Gorla, *Power loss analysis of different high power density gearbox typologies: CFD analysis and experimental measurements on a cycloidal gear set,* International Conference on Gears 2019, Munich, Germany

- 2019 Franco Concli, Alvaro Gonzales Jimenez Alvaro, Andrea Manes, Marco Giglio, *Experimental testing and numerical modelling of a Kevlar woven - Epoxy matrix composite subjected to a punch test,* AIAS 2019, Pisa, Italy

- 2019 Franco Concli, Lorenzo Maccioni, *Fracture locus of a CORTEN steel: Finite Element calibration based on experimental results*, AIAS 2019, Pisa, Italy, DOI: 10.1016/j.prostr.2020.02.065

- 2019 Luca Bonaiti, Franco Concli, Carlo Gorla, Francesco Rosa, *Bending fatigue behavior of 17-4~PH gears produced via selective laser melting*, AIAS 2019, Pisa, Italy, DOI: 10.1016/j.prostr.2020.02.068

- 2020 Lorenzo Maccioni, Eleonora Rampazzo, Filippo Nalli, Yuri Borgianni, Franco Concli, L*ow-Cycle-Fatigue Properties of a 17-4 PH Stainless Steel Manufactured via Selective Laser Melting*, ICMMT 2020, Bangkok, Thailand

- 2020 Lorenzo Maccioni, Lorenzo Fraccaroli, Franco Concli, *High-Cycle-Fatigue Characterization of an Additive Manufacturing 17-4 PH Stainless Steel*, ICMMT 2020, Bangkok, Thailand

- 2020 Lorenzo Maccioni, Aurora Berni, Franco Concli, Yuri Borgianni, *Satisfaction with and Motivations behind the Use of 3D Printers in Fab Labs: the consequences for Design for Additive Manufacturing*, ICMMT 2020, Bangkok, Thailand

- 2020 Lorenzo Fraccaroli, Eleonora Rampazzo, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties*, ICMEP2020, Budapest, Hungary

- 2020 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties*, ICMEP2020, Budapest, Hungary

- 2020 Nezzi Chiara, Franco Concli, *Hybrid Transmissions for the Optimization of the Efficiency of Internal Combustion Engines*, Urban Transportation 2020 (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2020 Lorenzo Fraccaroli, Marco N. Mastrone, *Franco Concli*, Calibration Of The Fracture Locus Of An Aluminum Alloy, HPSM/OPTI 2020 WIT Transactions on the Built Environment, 2020, 196, pp. 3–10ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2020 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: Low-Cycle-Fatigue Properties*, WMMET2020, Prague, Czech Republic

- 2020 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: High-Cycle-Fatigue Properties*, WMMET2020, Prague, Czech Republic

- 2020 Franco Concli, *Lubrication Simulations of Roller Bearings: the most effective approach,* AIAS 2020, Virutal Conference, Italy

- 2020 Zaki Alomar, Franco Concli, *A Review of The SLM Lattice Structures Numerical Models*, AIAS 2020, Virutal Conference, Italy

- 2020 Lorenzo Maccioni, Marco N. Mastrone, Franco Concli, *Computational studies on cycloidal gearboxes: a systematic literature review*, AIAS 2020, Virutal Conference, Italy

- 2020 Marco N. Mastrone, Franco Concli, *Churning Power Losses of Spiral Bevel Gears: An Analysis based on Computational Fluid Dynamics*, AIAS 2020, Virutal Conference, Italy

- 2020 Lorenzo Fraccaroli, Franco Concli, *Structural modelling of multilayer skis with an open source FEM software*, AIAS 2020, Virutal Conference, Italy

- 2020 Franco Concli, *Equilibrium of a journal bearing: a simplified CFD-analytical coupled approach*, Advanced in fluid mechanics IX (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK, DOI: 10.2495/AFM200021

- 2020 Franco Concli, *Dynamic Modelling OF Gears: An Innovative Hybrid Fem-Analytical Approach*, BEM/MRM 2020 (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2020 Lorenzo Maccioni, Yuri Borgianni, Franco Concli, *High Power Density Speed Reducers: A TRIZ Based Classification of Mechanical Solutions*, IFIP Advances in Information and Communication Technology Volume 597 IFIP, 2020, Pages 243-253

- 2020 Marco Nicola Mastrone, Lorenzo Fraccaroli, *Franco Concli*, *Calibration of the fracture locus of an alsi10 aluminum alloy,* High Performance and Optimum Design of Structures and Materials IV, 196, 3., Wessex institute of technology, UK, DOI: 10.2495/HPSM200011

- 2021 Fraccaroli Lorenzo, Franco Concli, *Characterization of Composite Materials via DIC and Structural modelling of multilayer skis with an open source FEM software*, Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 Marco N Mastrone, *Franco Concli*, Simulation of fluid's aeration: implementation of a numerical model in an opensource environment, AFM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 Marco N Mastrone, *Franco Concli,* Development of a mesh clustering algorithm aimed to reduce the mesh usage and the computational effort of gearboxes' simulations, BEM/MRM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 *Franco Concli,* Margherita Molinaro, Eleonora Rampazzo, *D*esign for additive manufacturing, is it an effective alternative? – part 1: material characterization and geometrical optimization, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 *Franco Concli,* Margherita Molinaro, Eleonora Rampazzo, *D*esign for additive manufacturing, is it an effective alternative? – part 2: cost evaluation, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 *Franco Concli,* Maccioni Lorenzo, Bonaiti Luca, *Reliable gear design: by translating translation of the results of single tooth bending fatigue tests through the combination of numerical simulations and fatigue criteria*, CMEM (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 Ronant Monteiro, Renato Vidoni, *Franco Concli, A multibody dynamic model for evaluating the vibrating modes of gear train systems*, CMEM International Journal of Transport Development and Integration 5(3), pp. 264-277 Wessex institute of technology, UK, https://10.2495/TDI-V5-N3-264-277

- 2021 *Franco Concli,* Lorenzo Maccioni, *Critical planes citeria applied to gear teeth: which one is the most appropriate to characterize crack propagation?,* Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 *Franco Concli,* Lorenzo Fraccaroli, *Bending fatigue strength of small size 2 mm module gears,* Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 Lorenzo Fraccaroli, Gorla Carlo, *Franco Concli, Structural modelling of multilayer skis with an open source fem software,* Material Characterization (WIT Transactions on Engineering Sciences) ISBN: 978-1-84564-600-4 - Wessex institute of technology, UK

- 2021 Lorenzo Fraccaroli, *Franco Concli*, *17-4 PH SS Manufactured via Selective Laser Melting: High Cycle fatigue properties*, WMMES, Prague

- 2021 Lorenzo Fraccaroli, Franco Concli, *17-4 PH SS Manufactured via Selective Laser Melting: Low Cycle fatigue properties*, WMMES, Prague

- 2021 Cristian Cappellini, Franco Concli, *FEM modelling of tool wear in hard turning operations*, WMMES, Prague ***BEST PAPER AWARD***

- 2022 Aurora Berni, Florian Dallago, Lorenzo Maccioni, *Franco Concli*, Yuri Borgianni, *The Role of Rapid Prototyping Devices in the Design and Manufacturing Practices of FabLab Visitors: A Survey*, Lecture Notes in Mechanical Engineering, 2022, pp. 401–409

- 2022 Pagliari, L., Nezzi, C., Fraccaroli, L., *Concli, F. Development of a FEM Model for the Digital Twin Application and the Monitoring of Cor-Ten Road Barriers in the Autonomous Province of Bozen/Bolzano* 525 LNNS, pp. 139-150. DOI: 10.1007/978-3-031-14317-5_12

- 2022 Ghasemi, M., Silani, M., Yaghoubi, V., *Concli, F. Performance Prediction of Thin-Walled Tube Energy Absorbers Using Machine Learning* 525 LNNS, pp. 87-99. DOI: 10.1007/978-3-031-14317-5_8

- 2022 de Paula Monteiro, R., Vidoni, R., *Concli, F. Two Different Numerical Approaches for Supporting Vibration-Based Structural Health Monitoring of Gear Train Systems* 525 LNNS, pp. 34-46. DOI: 10.1007/978-3-031-14317-5_4

- 2022 Alomar, Z., Cappellini, C., *Concli, F. An Element Deletion Algorithm for an Open-Source Finite Element Software* pp. 137-144. DOI: 10.1007/978-3-031-06025-0_14

- 2023 *Concli, F., A numerical approach to evaluate the impact of the shot peening process on the fatigue performances of mechanical components, ISIEA 2023*

- 2023 Ghasemi M, Silani M, Yaghoubi V, *Concli F, Data-driven machine learning to predict thin-walled tube energy absorbers, ISIEA 2023*

- 2023 Maccioni L, *Concli F, Estimation of hydraulic power losses in a double-row tapered roller bearing via computational fluid dynamics, ISIEA 2023*

- 2023 Fraccaroli L, Pagliari L, *Concli F, A combined analytical-numerical approach to evaluate the efficiency of cycloidal speed reducers, ISIEA 2023*

- 2023 Pagliari L, Fraccaroli L, *Concli F, Numerical Analysis of the Impact of Shot Peening on the Tooth Root Strength of AlSi10Mg Gears using Critical Plane Multiaxial Fatigue Criteria, ISIEA 2023*

- 2023 Gbagba S, *Concli F, Advances in machine learning techniques used in fatigue life prediction of welded structures, ISIEA 2023*

- 2023 Taghizadeh S, Niknejad A, *Concli F, Mechanical behavior of novel bio composite sandwich structures under quasi-static compressive loading condition, ISIEA 2023*

- 2023 Taghizadeh S, *Concli F, Numerical investigation of the mechanical performance of multilayer composite laminates under low velocity impact loading condition, ISIEA 2023*

- 2023 Gandhi R, *Concli F,* Maccioni L, *A finite element level-set approach for optimizing the topology of complete disc replacement in the lumbar spine, ISIEA 2023*

- 2023 *Concli F, Additive Manufacturing: fatica ad alto e baso numero di cicli per un acciaio inossidabile ed una lega di alluminio, T&F 2023*

Bibliometric indicators

09/A3

	Journal Articles		Citations (Scopus)		H-index	
	Last 5y	Last 10y	Last 10y	Last 15y	Last 10y	Last 15y
Franco Concli	49	56	1254	1254	25	25
Threshold Associate Professor qualification	9	-	110	-	6	-
Threshold Full Professor qualification	-	15	-	237	-	9
Commissioner	-	23	-	362	-	11

Publications about the applicant

- Trentini F., Power Drive Innovation specialisti a confronto, OT2016, Volume 7, Tecniche Nuove, Milan, ISSN: 0030-4905

Statement of interest

His research interests have focused on a variety of topics related to the field of Mechanical and Industrial Engineering, moving, over the years, from aeronautical applications, object of the first studies (Gear strength calculation and dynamic damaging of helicopter gearboxes), to the design and the methods of calculation and verification of the resistance of mechanical components, application of Finite Element Method to the structural analysis and the Finite Volume Method

to the fluid mechanics and advanced approaches for the design. While addressing different aspects, research activities have focused on, such as application area, that of mechanical power transmission and gears in particular. The research was conducted as part of granted national and international programs and different research contracts from the Department of Mechanical Engineering of Politecnico di Milano, FZG (Forschungsstelle für Zahnräder und Getriebebau) at TU München (D), the Bonfiglioli Mechatronic Research Institute and the Faculty of Science and Technology of the Free University of Bolzano.

Here some of the activities:
- Study of innovative transmission systems with energy recovery
- Calculation methods for gear wheels made of plastic and experimentation
- Advanced engineering methods and optimization of gears, with particular reference to the aerospace industry
- Failure detection of mechanical components
- Fatigue strength of gears. Design and implementation of a test rig for the measurement of the gear strength
- Efficiency of gear and design criteria for the reduction of the power losses and the heat generation. Design and implementation of a test rig for the measurement of the gear efficiency
- Advanced engineering methods and optimization of planetary gearboxes, with particular reference to the field of packaging and robotics
- Reliability of systems
- Study of the dynamic behavior of systems: acoustic emissions, vibration, transmission errors and noise
- Study and application of new materials and coatings to mechanical components to improve the mechanical performances, reducing wear and acoustic emission
- Dynamic modeling of mechanical systems
- Study of innovative kinematic solutions for power transmission
- Study of innovative materials such as austempered cast iron (ADI) or Case-hardening steels with optimized quenchability (Jomasco)
- Study of innovative coatings to increase the mechanical properties of mechanical components
- Study of the influence of new manufacturing processes such as Additive Manufacturing on the mechanical properties
- Characterization of the ductile damage of metals
- Characterization of the quasi-static and dynamic response of composite structures
- Structural Health Monitoring
- Development of numerical methods for the study of lubrication of mechanical components.
- Tribology of mechanical systems.

Language competence

Italian – first language – C1 (patentino A – Zweisprachigkeitsprüfung A)
German – C1 (patentino A – Zweisprachigkeitsprüfung A)
English – C1 (unibz certificate)

The undersigned Franco Concli gives his/her consent to his/her personal data being processed, within the limits of the legislative decree 196/2003, for formalities connected with the present procedure.