

PERSONAL INFORMATION **Simona Celi** s.celi@ftgm.it bcl.ftgm.it

Gender | Date of birth xx xx xxxx | Nationality

CURRENT PROFESSIONAL POSITION

- October 2023 – to date **Director of the Bioengineering Unit**
Fondazione Toscana “G. Monasterio” – Massa/Pisa
- October 2015 – to date **Director of the BioCardioLab**
Fondazione Toscana “G. Monasterio” – Massa
- Sept 2023 – to date **Member of the Scientific Technical Committee of "Centro di biomedicina sperimentale" FTGM-CNR-UNIPIS-SSSUP**
- Sept 2022 – to date **Member of the executive board of the Gise Foundation**

PAST PROFESSIONAL EXPERIENCE

- Sept 2017 – 2023 **Member of the executive board of the Italian Chapter of the European Society of Biomechanics**
- Sept 2012 – Sept 2023 **Adjunct Professor**
University of Pisa
MSc course in Biomedical Engineering, University of Pisa, Italy
Courses – Technologies for Regenerative Medicine.
- Jan 2022 – Oct 2023 **Dirigente Ingegnere - Researcher**
Fondazione Toscana “G. Monasterio” – Massa
Group Leader BioCardioLab
- Sept 2015 – Jan 2022 **Tech. Cat D - Researcher**
Fondazione Toscana “G. Monasterio” – Massa
Group Leader BioCardioLab
- Sept 2017 – 2022 **Adjunct Professor**
University of Pisa
MSc course in Biomedical Engineering, University of Pisa, Italy

- Courses**
- Technologies for Regenerative Medicine (I);
 - Technologies for Regenerative Medicine (II).

Sept 2017 – 2018 **Adjunct Professor**

University of Pisa

MSc course in Biomedical Engineering, University of Pisa, Italy

- Courses**
- Numerical Methods for engineering;
 - Methods for principles of diagnosis.

Sept 2017 – 2018 **Teaching Assistant**

University of Pisa

MSc course in Biomedical Engineering, University of Pisa, Italy

- Seminar**
- Integration between numerical simulation and medical imaging.

Nov 2012 – Dec 2014 **Postdoctoral fellow**

Scuola Superiore Sant'Anna – Pisa, Italy

Dec 2013 – Nov 2014 External consultant European Project RT3S (Real Time Simulation for Safer vascular Stenting)
Medtronic

Dec 2013 – Nov 2014 External consultant European Project RT3S (Real Time Simulation for Safer vascular Stenting)
Ansys, Lyon, France

March 2013 Visiting Researcher
St Jude Medical, Westford (MA)

Sept 2012 – Nov 2012 **Postdoctoral fellow**

Fondazione Toscana "G. Monasterio" – Massa, Italy

Sept 2008 – Sept 2012 **Postdoctoral fellow**

Institute of Clinical Physiology of CNR, Pisa, Italy

Jan 2011 – Dec 2011 Lab Associate
Yale University, Dep. of Bioengineering

2008 – 2010 Research assistant
Dep. of Mech. Nucl. and Prod. Eng., University of Pisa, Italy

Jan 2012 – Dec 2012 **Adjunct Professor**

Medicine and Surgery Faculty of Università Cattolica del Sacro Cuore,

BSc course in "Tecniche di Fisiopatologia Cardiocircolatoria e Perfusionazione Cardiovascolare",
Campobasso, Italy

- Course**
- Bioelectronics and Bioinformatics

Sept 2008 – 2011 **Teaching Assistant**

University of Pisa

MSc course in Biomedical Engineering, University of Pisa, Italy

- Courses**
- Mechanics I, Mechanics II, Biostructures, Biomechanics, Machine Design, Mechanics of Solids: Structural Mechanics, Biomaterials, Biorobotic.

2004 – Sep 2010 **Research assistant**
Faculty of Engineering, University of Pisa, Italy

EDUCATION AND TRAINING

Dec 2007 **PhD in Mechanical Engineering**
Faculty of Engineering, University of Pisa, Pisa, Italy

Dec 2004 **MSc in Mechanical Engineering**
Faculty of Engineering, University of Pisa, Pisa, Italy

ADDITIONAL INFORMATION

- Patents**
- “Method of processing optical coherence tomography images”, Assignees: Consiglio Nazionale delle Ricerche, Fondazione Toscana Gabriele Monasterio per la Ricerca Medica e di Sanità Pubblica Inventors: S. Celi and S. Berti (WO 2014002067 A3);
 - APPARATO PER TOMOGRAFIA OTTICA A COERENZA DI FASE, Assignees: Scuola Superiore Sant’Anna, Consorzio Nazionale Interuniversitario per le Telecomunicazioni – CNIT, Fondazione Toscana Gabriele Monasterio per la Ricerca Medica e di Sanità Pubblica Inventors: Antonio Malacarne, Antonella Bogoni, Paolo Ghelfi, Simona Celi, Mirco Scaffardi (B10/1399);
 - Robot for minimal invasive surgery, (PCT/IB2019/054060), Assignees: Scuola Superiore Sant’Anna, Università di Pisa, Consiglio Nazionale delle Ricerche, Fondazione Toscana Gabriele Monasterio per la Ricerca Medica e di Sanità Pubblica Inventors: Izadyar Tamadon, Claudio Quaglia, Selene Tognarelli, Arianna Menciassi, Simona Celi, Pier Andrea Farneti, Sara Condino, Giorgio Soldani, Paola Losi, Vincenzo Ferrari.

- Editorial activities**
- Handling editor for three international special issues.
- SI “Digital Twin Technology: New Frontiers for Personalized Healthcare”, MDPI, Electronics 2023;
 - SI “New Experimental and Numerical Insights on Cardiovascular Biomechanics through In-vivo and Ex-vivo Methods”, Frontiers in Physiology Computational Physiology and Medicine, 2023;
 - SI “Applications of 3D Printing in Cardiovascular Medicine”, Frontiers in Cardiovascular Medicine General Cardiovascular Medicine, 2023.

- Participation in committees:**
- Member of the evaluation committee for the recruitment of researches for the Bioengineering Unit at Fondazione G. Monasterio
 - Member of the evaluation committee for the recruitment of the PhD students for the Bioengineering Courses of University of Pisa
 - Member of the evaluation committee for the final PhD Defence at: Politecnico of Torino, Ecole de min de Saint Etienne, Università di Tor Vergata, Delft University, Pompeu Fabra University.
 - Member of the evaluation committee for the Best Master Thesis award ESB-ITA (2021- to date)
 - Member of the evaluation committee for the Best Poster Award ESB-ITA (2023)

Projects Participation

- Staff member, RESIL-Card EU Project (Fondazione GISE)
- Technical PI for "An integrated pipeline for planning of Percutaneous Left Atrial Appendage Occlusion based on 3D printed and in-silico models (PLACE)" funded by the Italian Ministry of Health grant number RF-2021-12375208
- Technical local PM, for REPAIRE EU Project (Restoring cardiac mechanical function by polymeric artificial muscular tissue, Grant agreement ID: 952166)
- Local PI, WPs leader for EU MC-ITN project Meditate (Medical Digital Twin for Aneurysm prevention and Treatment, Grant agreement ID: 859836)
- PI, project for OCT coronary system investigation on bench test, funded by Abbott
- Local PI, DITAIDD – FF4EUROHPC – EXP. 1006, "Cloud – based hpc platform to generate a DT of the human airways, paving the way for personalised medicine in customised drug delivery"
- Local PI, COPERNICUS – FF4EUROHPC – EXP. 1006, Cloud – based HPC platform to support systemic-pulmonary shunting procedures
- PI, "fastAAA" project, Italian SuperComputing Resource Allocation – CINECA, ISCRA C
- PI, project with InsilicoTrials for aneurysms prevention, 2022
- PI, project for gait analysis Q-Walk for funded by QuicklyPro, 2022
- Local PI, WPs leader for Tender 3R EU project
- Technical PM, WPs leader for PENSAMI Project (A Precision mEdicine-baSed frAMework to pediatric patients with chronic diseases, Bando Ricerca Salute 2018 – "Bando pubblico regionale per progetti di ricerca e sviluppo mirati al sostegno ai processi di innovazione clinica e organizzativa del Servizio Sanitario Regionale" (Decreto n.15397 del 26-09-2018))
- Local PI, WPs leader for "MyBreathingHeart Project" (Bando Ricerca COVID-19 Toscana CUP n. J64G20000380001)
- Local PI, WPs leader for PRECISE Project (Personalised and pREdictive Surgical Simulation for preClse tumor reSEction, Bando Ricerca Salute 2018 – Bando pubblico regionale per progetti di ricerca e sviluppo mirati al sostegno ai processi di innovazione clinica e organizzativa del Servizio Sanitario Regionale – Regione Toscana)
- Responsible engineering activities at Fondazione Toscana G. Monasterio and WPs leader for the 3D Baby Heart project
- Local PI, WPs leader for the "High-speed 3D-imaging of blood vessels based on optical signal processing (DIVINE)" project
- Local engineering PI and WPs leader for the Valvetech project, funded by Regione Toscana
- PI engineering activities at Fondazione Toscana G. Monasterio for the ScriPT project
- Sub-contractor (Medtronic and Ansys Consultant) for the European project RT3S (Real Time Simulation for Safer vascular Stenting)
- Consultant Laboratorio Biomateriali IFC-CNR: Biomateriali avanzati e tecniche di fabbricazione 3D per lo sviluppo di nuove valvole cardiache polimeriche (POR CREO FESR 2007-2013. Bando Unico R&S Anno 2012)
- Consultant Laboratorio Biomateriali IFC-CNR: Evaluation of Nitinol mesh reinforced grafts in the carotid by-pass sheep model
- Consultant Realization of bivalirudin eluting Polyurethane-Polydimethylsiloxane small-diameter vascular grafts and pre-clinical study as carotid artery by-pass in sheep animal (Regional Health Research Program 2009)
- Sub-contractor, PRIN project Tecniche innovative "physically based" per la diagnosi dei tumori della mammella: sonoelastografia integrata con determinazione della rigidità tissutale mediante simulazione numerica e caratterizzazione sperimentale
- Staff member (PhD student), PRIN project Metodologie integrate per la progettazione di dispositivi endovascolari

Project review activities

- ERC Consolidator Grant EU Project 2024;
- Science Foundation Ireland (SFI) Frontiers for the Future for the Future Programme Awards Stream 2024;
- Fondazione del Monte Research project in the territories of Bologna and Ravenna 2023;
- ERC Starting Grant EU Project 2023;

Seminar/Congress/Thematic session organization:

- Co-organiser IDBN 2024 congress, Firenze
- Co-organiser, BioPrinting Winter School "3D (bio)printing technologies", Pavia 2024
- Organiser Winter School 2023 Big "Data analytics from engineering to clinical"
- Co-organiser Additive manufacturing in healthcare: from 3d printing to bioprinting, Summer School, Como, 5-9 June 2023
- Co-organiser session "Biomechanics of cardiovascular system: modelling, simulation and imaging", CMBBE 2023 congress, Paris
- Co-organiser minisimposia "Mathematical and Computational Modelling of the Cardiovascular System", CFC 2023 congress, Cannes
- Co-chair CMBBE 2023 congress, Paris
- Co-chair ESB 2023 congress, Maastricht
- Organiser "ESB-ITA 2022 Congress"
- Co-chair III Convegno Annuale Centro 3R, 30 settembre - 1 ottobre 2021
- Co-chair ESB 2020 congress, Milan
- Co-organiser "ESB-ITA 2019 Congress"
- "Biomechanics for the bedside: a snapshot of recent experimental and modelling trends with clinical impact" for the 8th World Congress of Biomechanics, 2018;
- "3D printing and Biomechanics" for the Italian Digital Biomanufacturing Network – IDBN congress 2018
- Co-chair 2 Congresso IDBN - Italian Digital Biomanufacturing Network, 2018 Pavia

Invited lectures:

- "3D (bio)printing technologies, from segmentation to G-code", BioPrinting Winter School, Pavia 2024
- "Validation of fsi simulations against a compliant aortic phantom in a hybrid mock circulatory loop", CMBBE 2023 congress, Paris
- "3D (bio)printing technologies, from medical imaging to 3d model", BioPrinting Winter School, Como 2023
- Azienda USL Toscana Nord Ovest "Intelligenza artificiale e medicina digitale: riflessioni critiche (Dec 2022)"
- Azienda USL Toscana Nord Ovest "Intelligenza artificiale e medicina digitale: riflessioni critiche (Dec 2021)"
- DECODE Summer School, Politecnico di Milano (July 2022)
- III Convegno Annuale Centro 3R, 30 settembre - 1 ottobre 2021 "In silico models as non-animal methods for biomedical research in cardiovascular diseases: where are we now?"
- Azienda USL Toscana Nord Ovest "Intelligenza Artificiale – modelli, applicazioni presenti e future", (may 2021)
- Soluzioni per Healthcare Industry 4.0, Sales planet di TIM, formazione NEXTIM (April 2021)
- SURGERY 4.0: FROM MINIMAL INVASIVE SURGERY 3.0 TO VIRTUAL RECONSTRUCTION, Advanced live Surgery activities and live frontal lessons from the Robotic Multispecialist Centre of Pisa, 25th-26th November 2020
- "Quantificazione dell'incertezza e analisi di sensibilità stocastica della meccanica e della fluidodinamica in campo cardiovascolare", Frontuq19, 2019
- "Role and perspective of Uncertainty quantification approach: from clinical data to numerical simulation", Mediterranea Cardiac Surgery Symposia, 2019
- "Stampa 3D del cuore", at II level Master "Percutaneous interventional treatment of structural heart diseases", Scuola Superiore Sant'Anna 2017 and 2018.
- , "In-silico e in-vitro methods for modern medicine", at II level Master in innovation in cardiac surgery: advances in Minimally invasive therapeutics, Scuola Superiore Sant'Anna 2017 and 2018
- 3D Printing and Biomechanics 2° Congresso IDBN - Italian Digital Biomanufacturing Network III Thematic Conference, 2018
- "Biomeccanica e modelli di rischio di rottura degli aneurismi", TIC Training Interventistica Cardiovascolare 2011
- "Uncertainties in a computational FE model", Biomedical Dep., Yale University, New Haven, CT, USA

- Awards**
- Best Thesis Award ESB-Ita 2023, "Development and implementation of a combined CFD and mesh morphing technique for the thoracic aorta", student: Francesca Dell'Agnello
 - Finalist Best Thesis Award ESB-Ita 2022, "Statistical Shape Analysis of the Thoracic Aorta with supra-aortic vessels: development of a Non Rigid Registration Algorithm and correlation with CFD simulation results", student: Marilena Mazzoli
 - First Prize "Best Oral presentation" ESB-Ita 2019, Biaxial and optomechanical characterization of soft tissues: a novel setup and experimental tests, PhD student Emanuele Vignali
 - First Prize "Best Poster presentation" ESB-Ita 2019, In-silico assessment of thrombosis risk: a CFD study of left atrial and left atrial appendage, PhD student Katia Capellini
 - First Prize "Best Poster presentation" CAE-Conference 2018, Digital twin in healthcare: development of an integrated imaging and finite element model of Cardioband® procedure for the treatment of mitral regurgitation, PhD student Emanuele Gasparotti
 - "Best Poster presentation" ESC-Congress 2018, Importance of left atrium fluid dynamics for the planning of LAA closure procedure: an integrated computational fluid dynamics and morphological study, PhD student Benigno Marco Fanni
 - Spotlight paper during "Image processing for complex cardiovascular disease session ESC 2012, "An automatic segmentation and 3D reconstruction of OCT images for the evaluation of coronary pathologies"
 - Spotlight paper during "Image processing for complex cardiovascular disease session ESC 2012, "Towards regional ILT variation in abdominal aortic aneurysms: integration between experimental data and computational Finite Element Analyses"
 - First Prize "How to predict TAA rupture risk", 2nd International Meeting on Aortic Diseases (IMAD), Liegi, Belgium, 2010;
 - Finalist "An integrated FEM-OCT approach to investigate the effects of rotational atherectomy on the coronary wall stress", Endocardiac Biomechanics Research Congress, Marseille, France, 2010;
 - Selected paper "Probabilistic finite element simulations of elastosonography for breast lesions detection" at IV International Conference on Computational Bioengineering, ICCB, Bertinoro, Italia, 2009;
 - Guido Romeo Award, "Endotelializzazione in vitro di protesi vascolari di piccolo diametro: uso della metodica optical coherence tomography per il monitoraggio della crescita cellulare", XXX Congresso GISE 2009;
 - European Society of Biomechanics Travel Awards 2008.

- Supervising activities**
- 70 MsC thesis for University of Pisa, Politecnico di Milano, Università of Parma, Università Tor Vergata di Roma;
 - 9 PhD Students for University of Pisa, Politecnico di Milano, Universidad de Valladolid;
 - 3 PhD Students, Marie Skłodowska-Curie Actions (MSCA), Innovative Training Networks (ITN): Clinical image processing and Big Data analysis, PhD program of the Department of Enterprise Engineering of the University of Rome Tor Vergata (UTV), Italy; Tissue characterization and endovascular aortic repair in a circulatory mock loop, PhD program of University of Lyon at Mines Saint-Etienne, France; Personalized Ultrasound-based hemodynamics simulations in the diseased abdominal aorta, PhD program of University of Lyon at Mines Saint-Etienne, France.

International Peer review journal activities European Heart Journal – Imaging Methods and Practice, Transactions on Biomedical Engineering; APL Bioengineering; Annals of Biomedical Engineering; Cardiovascular Engineering and Technology; Journal of Biomechanics; Journal of the Mechanical Behavior of Biomedical Materials; International Journal of Computer Assisted Radiology and Surgery; Journal of Applied Biomaterials Functional Materials; Medical Engineering & Physics; Computers in Biology and Medicine; Plos One; Computer Methods and Programs in Biomedicine; Biomechanics and Modeling in Mechanobiology; Journal of Biomechanics; Computers in Biology and Medicine.

PUBLICATIONS

ORCID 0000-0002-7832-0122

Google Scholar scholar.google.com/citationshl=it&user=zQmrVXEAAAAJ

Citations 1286 (Google Scholar)

Papers Author of more than 300 publications on peer reviewed journal, contributions at National and International congresses.

PEER REVIEWED JOURNAL

- [1] F. Danielli, F. Berti, B.M. Fanni, E. Gasparotti, **S. Celi**, G. Pennati, and L. Petrini. “Left atrial appendage occlusion: On the need of a numerical model to simulate the implant procedure”. In: *International Journal for Numerical Methods in Biomedical Engineering* 40 (2024), e3814.
- [2] S. Garzia, K. Capellini, E. Gasparotti, D. Pizzuto, G. Spinelli, S. Berti, V. Positano, and **S. Celi**. “Three-Dimensional Multi-Modality Registration for Orthopaedics and Cardiovascular Settings: State-of-the-Art and Clinical Applications”. In: *Sensors* 24.4 (2024).
- [3] E. Gasparotti, B.M. Fanni, E. Del Pia, K. Capellini, F. Danielli, F. Berti, A. Clemente, S. Berti, G. Pennnati, L. Petrini, and **S. Celi**. “Computational Fluid Dynamic Simulation to Evaluate the Device-Related Effects After Left Atrial Appendage Occlusion”. In: *Lecture Notes in Computational Vision and Biomechanics* 39 (2024), pp. 205–212.
- [4] L. Geronzi, B.M. Fanni, B. De Jong, G. Roest, S. Kenjeres, **S. Celi**, and M.E. Biancolini. “A Parametric 3D Model of Human Airways for Particle Drug Delivery and Deposition”. In: *Fluids* 9.1 (2024).
- [5] M. Mariani, M. Bonanni, A. D’Agostino, G. Iuliano, A. Gimelli, M.A. Coceani, **S. Celi**, G.M. Sangiorgi, and S. Berti. “Multimodality Imaging Approach for Planning and Guiding Direct Transcatheter Tricuspid Valve Annuloplasty”. In: *Journal of the American Society of Echocardiography* 37.4 (2024), pp. 449–465.
- [6] A. Meloni, E. Maffei, A. Clemente, C. De Gori, M. Occhipinti, V. Positano, S. Berti, L. La Grutta, L. Saba, R. Cau, E. Bossone, C. Mantini, C. Cavaliere, B. Punzo, **S. Celi**, and F. Cademartiri. “Spectral Photon-Counting Computed Tomography: Technical Principles and Applications in the Assessment of Cardiovascular Diseases”. In: *Journal of Clinical Medicine* 13.8 (2024).
- [7] A. Rizza, V. Castiglione, K. Capellini, C. Palmieri, E. Gasparotti, S. Berti, and **S. Celi**. “Case Report: Role of numerical simulations in the management of acute aortic syndromes”. In: *Frontiers in Cardiovascular Medicine* 11 (2024).
- [8] J. Singh, K. Capellini, A. Mariotti, M.V. Salvetti, and **S. Celi**. “Predicting Atherosclerotic Plaque Onset and Growth in Carotid Arteries: A CFD-Driven Approach”. In: *11th International Work-Conference on Bioinformatics and Biomedical Engineering* – (2024). in-press.
- [9] E. Vignali, E. Gasparotti, L. Miglior, V. Gervasi, L. Simone, D. Haxhiademi, L. Frediani, G. Borelli, S. Berti, and **S. Celi**. “A New Smartphone-Based Method for Remote Health Monitoring: Assessment of Respiratory Kinematics”. In: *Electronics (Switzerland)* 13.6 (2024).
- [10] M.N. Antonuccio, E. Gasparotti, F. Bardi, A. Monteleone, A. This, L. Rouet, S. Avril, and **S. Celi**. “Fabrication of deformable patient-specific AAA models by material casting techniques”. In: *Frontiers in Cardiovascular Medicine* 10 (2023).
- [11] F. Bardi, E. Gasparotti, E. Vignali, S. Avril, and **S. Celi**. “A Hybrid Mock Circulatory Loop for Fluid Dynamic Characterization of 3D Anatomical Phantoms”. In: *IEEE Transactions on Biomedical Engineering* 70.5 (2023), pp. 1651–1661.
- [12] F. Cademartiri, A. Meloni, L. Pistoia, G. Degiorgi, A. Clemente, C. De Gori, V. Positano, **S. Celi**, S. Berti, M. Emdin, D. Panetta, L. Menichetti, B. Punzo, C. Cavaliere, E. Bossone, L. Saba, R. Cau, L.L. Grutta, and E. Maffei. “Dual Source Photon-Counting Computed Tomography—Part II: Clinical Overview of Neurovascular Applications”. In: *Journal of Clinical Medicine* 12.11 (2023).
- [13] F. Cademartiri, A. Meloni, L. Pistoia, G. Degiorgi, A. Clemente, C.D. Gori, V. Positano, **S. Celi**, S. Berti, M. Emdin, D. Panetta, L. Menichetti, B. Punzo, C. Cavaliere, E. Bossone, L. Saba, R. Cau, L.L. Grutta, and E. Maffei. “Dual-Source Photon-Counting Computed Tomography—Part I: Clinical Overview of Cardiac CT and Coronary CT Angiography Applications”. In: *Journal of Clinical Medicine* 12.11 (2023).
- [14] K. Calò, K. Capellini, G. De Nisco, V. Mazzi, E. Gasparotti, D. Gallo, **S. Celi**, and U. Morbiducci. “Impact of wall displacements on the large-scale flow coherence in ascending aorta”. In: *Journal of Biomechanics* 154 (2023).
- [15] M. Cantinotti, P. Marchese, M. Scalese, R. Giordano, E. Franchi, N. Assanta, M. Koestenberger, B.T. Barnes, **S. Celi**, V. Jani, I. Voges, and S. Kutty. “Characterization of Aortic Flow Patterns by High-Frame-Rate Blood Speckle Tracking Echocardiography in Children”. In: *Journal of the American Heart Association* 12.8 (2023).
- [16] **S. Celi**, E. Gasparotti, K. Capellini, F. Bardi, M.A. Scarpolini, C. Cavaliere, F. Cademartiri, and E. Vignali. “An image-based approach for the estimation of arterial local stiffness in vivo”. In: *Frontiers in Bioengineering and Biotechnology* 11 (2023).

- [17] A. Di Giglio, M. Laurino, G. Sacco, G. Karanasiou, S. Berti, E. Maiettini, M. Piccinino, V. Stavroulaki, **S. Celi**, N. Boccardo, P. Iovanna, A.P. Bianzino, C. Benvenuti, L. Natale, and G. Bottari. “Large-scale trialing of the B5G technology for eHealth and Emergency domains”. In: *2023 IEEE International Conference on E-Health Networking, Application and Services, Healthcom 2023* (2023), pp. 78–83.
- [18] B.M. Fanni, M.N. Antonuccio, A. Pizzuto, S. Berti, G. Santoro, and **S. Celi**. “Uncertainty Quantification in the In Vivo Image-Based Estimation of Local Elastic Properties of Vascular Walls”. In: *Journal of Cardiovascular Development and Disease* 10.3 (2023).
- [19] B.M. Fanni, E. Gasparotti, E. Vignali, C. Capelli, V. Positano, and **S. Celi**. “An integrated in-vitro and in-silico workflow to study the pulmonary bifurcation hemodynamics”. In: *Computers and Fluids* 260 (2023).
- [20] S. Garzia, M.A. Scarpolini, M. Mazzoli, K. Capellini, A. Monteleone, F. Cademartiri, V. Positano, and **S. Celi**. “Coupling synthetic and real-world data for a deep learning-based segmentation process of 4D flow MRI”. In: *Computer Methods and Programs in Biomedicine* 242 (2023).
- [21] E. Gasparotti, E. Vignali, S. Quartieri, R. Lazzeri, and **S. Celi**. “Numerical investigation on circular and elliptical bulge tests for inverse soft tissue characterization”. In: *Biomechanics and Modeling in Mechanobiology* 22.5 (2023), pp. 1697–1707.
- [22] E. Gasparotti, E. Vignali, S. Quartieri, R. Lazzeri, and **S. Celi**. “Numerical investigation on circular and elliptical bulge tests for inverse soft tissue characterization”. In: *Biomechanics and Modeling in Mechanobiology* 22.5 (2023), pp. 1697–1707.
- [23] M. Koch, C. Arlandini, G. Antonopoulos, A. Baretta, P. Beaujean, G.J. Bex, M.E. Biancolini, **S. Celi**, E. Costa, L. Drescher, V. Eleftheriadis, N.A. Fadel, A. Fink, F. Galbiati, I. Hatzakis, G. Hompis, N. Lewandowski, A. Memmolo, C. Mensch, D. Obrist, V. Paneta, P. Papadimitroulas, K. Petropoulos, S. Porziani, G. Savvidis, K. Sethia, P. Strakos, P. Svobodova, and E. Vignali. “HPC+ in the medical field: Overview and current examples”. In: *Technology and Health Care* 31.4 (2023), pp. 1509–1523.
- [24] L. Landini, V. Positano, M.F. Santarelli, and **S. Celi**. “Digital Twin Technology: New Frontiers for Personalized Healthcare”. In: *Electronics (Switzerland)* 12.8 (2023).
- [25] A. Lenzini, C.C. Zirafa, I. Ceccarelli, G. Romano, G. Ali, K. Capellini, F. Davini, **S. Celi**, G. Fontanini, and F. Melfi. “Surgical management of teratoma located in pretracheal retrocaval space: from pre-operative 3D reconstruction to robotic surgery”. In: *Video-Assisted Thoracic Surgery* 8 (2023).
- [26] A. Mariotti, M.N. Antonuccio, M. Morello, M.V. Salvetti, and **S. Celi**. “Numerical simulation of aortic coarctations of different grades of severity: Flow features and importance of outlet boundary conditions”. In: *Computers and Fluids* 266 (2023).
- [27] A. Mariotti, **S. Celi**, M.N. Antonuccio, and M.V. Salvetti. “Impact of the Spatial Velocity Inlet Distribution on the Hemodynamics of the Thoracic Aorta”. In: *Cardiovascular Engineering and Technology* 14.5 (2023), pp. 713–725.
- [28] A. Mariotti, E. Vignali, E. Gasparotti, M. Morello, J. Singh, M.V. Salvetti, and **S. Celi**. “In Vitro Analysis of Hemodynamics in the Ascending Thoracic Aorta: Sensitivity to the Experimental Setup”. In: *Applied Sciences (Switzerland)* 13.8 (2023).
- [29] A. Meloni, F. Cademartiri, L. Pistoia, G. Degiorgi, A. Clemente, C. De Gori, V. Positano, **S. Celi**, S. Berti, M. Emdin, D. Panetta, L. Menichetti, B. Punzo, C. Cavaliere, E. Bossone, L. Saba, R. Cau, L. La Grutta, and E. Maffei. “Dual-Source Photon-Counting Computed Tomography—Part III: Clinical Overview of Vascular Applications beyond Cardiac and Neuro Imaging”. In: *Journal of Clinical Medicine* 12.11 (2023).
- [30] A. Meloni, F. Cademartiri, V. Positano, **S. Celi**, S. Berti, A. Clemente, L. La Grutta, L. Saba, E. Bossone, C. Cavaliere, B. Punzo, and E. Maffei. “Cardiovascular Applications of Photon-Counting CT Technology: A Revolutionary New Diagnostic Step”. In: *Journal of Cardiovascular Development and Disease* 10.9 (2023).
- [31] A. Pizzuto, F. Raimondi, **S. Celi**, G.B. Calabri, G. Spaziani, E. Gasparotti, K. Capellini, A. Clemente, F. Amoretti, S. Favilli, and G. Santoro. “Transcatheter Treatment of Native Idiopathic Multiloculated Aortic Aneurysm Guided by 3D Printing Technology”. In: *JACC: Case Reports* 8 (2023).
- [32] V. Positano, E. Ferrari, S. Chen, and **S. Celi**. “Editorial: Applications of 3D printing in cardiovascular medicine”. In: *Frontiers in Cardiovascular Medicine* 10 (2023).
- [33] S. Scalera, A. Clemente, A. Pizzuto, E. Gasparotti, B.M. Fanni, E. Vignali, K. Capellini, **S. Celi**, and G. Santoro. “3D Printed Model-Guided Neonatal Transcatheter Closure of Left Main Coronary Artery-to-Right Ventricle Fistula”. In: *JACC: Case Reports* 16 (2023).
- [34] M.A. Scarpolini, M. Mazzoli, and **S. Celi**. “Enabling supra-aortic vessels inclusion in statistical shape models of the aorta: a novel non-rigid registration method”. In: *Frontiers in Physiology* 14 (2023).

- [35] E. Vignali, E. Peña, M. Aguirre, and **S. Celi**. “Editorial: New experimental and numerical insights on cardiovascular biomechanics through in-vivo and ex-vivo methods”. In: *Frontiers in Physiology* 14 (2023).
- [36] E. Vignali, E. Gasparotti, D. Haxhiademi, and S. Celi. “Fluid dynamic model for extracorporeal membrane oxygenation support and perfusion in cardiogenic shock”. In: *Physics of Fluids* 35.11 (2023).
- [37] M.N. Antonuccio, H.G. Morales, A. This, K. Capellini, S. Avril, **S. Celi**, and L. Rouet. “Towards the 2D velocity reconstruction in abdominal aorta from Color-Doppler Ultrasound”. In: *Medical Engineering and Physics* 107 (2022).
- [38] K. Capellini, V. Positano, M. Murzi, P.A. Farneti, G. Concistrè, L. Landini, and **S. Celi**. “A Decision-Support Informatics Platform for Minimally Invasive Aortic Valve Replacement”. In: *Electronics (Switzerland)* 11.12 (2022).
- [39] M. Cuman, A. Clemente, **S. Celi**, and G. Santoro. “3D model-guided transcatheter closure of ascending aorta pseudoaneurysm with the novel Amplatzer Trevisio intravascular delivery system”. In: *Catheterization and Cardiovascular Interventions* 99.1 (2022), pp. 140–144.
- [40] B.M. Fanni, M.N. Antonuccio, G. Santoro, A. Mariotti, M.V. Salvetti, and **S. Celi**. “Effects of uncertainties of image-based material properties of great vessels on vascular deformation”. In: *World Congress in Computational Mechanics and ECCOMAS Congress* (2022).
- [41] B.M. Fanni, A. Pizzuto, G. Santoro, and **S. Celi**. “Introduction of a Novel Image-Based and Non-Invasive Method for the Estimation of Local Elastic Properties of Great Vessels”. In: *Electronics (Switzerland)* 11.13 (2022).
- [42] E. Gasparotti, E. Vignali, M. Mariani, S. Berti, and **S. Celi**. “Image-based modelling and numerical simulations of the Cardioband® procedure for mitral valve regurgitation repair”. In: *Computer Methods in Applied Mechanics and Engineering* 394 (2022).
- [43] E. Kardampiki, E. Vignali, D. Haxhiademi, D. Federici, E. Ferrante, S. Porziani, A. Chiappa, C. Groth, M. Cioffi, M.E. Biancolini, E. Costa, and **S. Celi**. “The Hemodynamic Effect of Modified Blalock–Taussig Shunt Morphologies: A Computational Analysis Based on Reduced Order Modeling”. In: *Electronics (Switzerland)* 11.13 (2022).
- [44] A. Mariotti, E. Gasparotti, E. Vignali, P. Marchese, **S. Celi**, and M.V. Salvetti. “Integrating in-vivo Data in CFD Simulations and in in-vitro Experiments of the Hemodynamic in Healthy and Pathologic Thoracic Aorta”. In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 13347 LNBI (2022), pp. 208–219.
- [45] A. Mariotti, E. Vignali, E. Gasparotti, P. Marchese, M. Morello, M.V. Salvetti, and **S. Celi**. “Hemodynamics in healthy and pathological thoracic aorta: integration of in-vivo data in cfd simulations and in in-vitro experiments”. In: *World Congress in Computational Mechanics and ECCOMAS Congress* (2022).
- [46] G. Santoro, A. Rizza, A. Pizzuto, S. Berti, M. Cuman, E. Gasparotti, K. Capellini, M. Cantinotti, A. Clemente, and **S. Celi**. “Transcatheter Treatment of Ascending Aorta Pseudoaneurysm Guided by 3D-Model Technology”. In: *JACC: Case Reports* 4.6 (2022), pp. 343–347.
- [47] E. Vignali, E. Gasparotti, A. Mariotti, D. Haxhiademi, L. Ait-Ali, and **S. Celi**. “High-Versatility Left Ventricle Pump and Aortic Mock Circulatory Loop Development for Patient-Specific Hemodynamic in Vitro Analysis”. In: *ASAIO Journal* 68.10 (2022), pp. 1272–1281.
- [48] M.N. Antonuccio, A. Mariotti, B.M. Fanni, K. Capellini, C. Capelli, E. Sauvage, and **S. Celi**. “Effects of Uncertainty of Outlet Boundary Conditions in a Patient-Specific Case of Aortic Coarctation”. In: *Annals of Biomedical Engineering* 49.12 (2021), pp. 3494–3507.
- [49] F.D. Bartolo, E. Vignali, E. Gasparotti, A. Malacarne, L. Landini, and **S. Celi**. “Numerical simulations of light scattering in soft anisotropic fibrous structures and validation of a novel optical setup from fibrous media characterization”. In: *Electronics (Switzerland)* 10.5 (2021), pp. 1–14.
- [50] K. Capellini, E. Gasparotti, U. Cella, E. Costa, B.M. Fanni, C. Groth, S. Porziani, M.E. Biancolini, and **S. Celi**. “A novel formulation for the study of the ascending aortic fluid dynamics with in vivo data”. In: *Medical Engineering and Physics* 91 (2021), pp. 68–78.
- [51] A. Cavallo, E. Gasparotti, P. Losi, I. Foffa, T. Al Kayal, E. Vignali, **S. Celi**, and G. Soldani. “Fabrication and in-vitro characterization of a polymeric aortic valve for minimally invasive valve replacement”. In: *Journal of the Mechanical Behavior of Biomedical Materials* 115 (2021).
- [52] **S. Celi**, E. Gasparotti, K. Capellini, E. Vignali, B.M. Fanni, L.A. Ali, M. Cantinotti, M. Murzi, S. Berti, G. Santoro, and V. Positano. “3d printing in modern cardiology”. In: *Current Pharmaceutical Design* 27.16 (2021), pp. 1918–1930.
- [53] **S. Celi**, E. Vignali, K. Capellini, and E. Gasparotti. “On the Role and Effects of Uncertainties in Cardiovascular in silico Analyses”. In: *Frontiers in Medical Technology* 3 (2021).

- [54] M. Cuman, G. Santoro, K. Capellini, E. Gasparotti, A. Pizzuto, S. Berti, **S. Celi**, and A. Clemente. “3D model-guided transcatheter closure of a complex aortic paravalvular leak”. In: *Journal of Cardiovascular Medicine* 22.8 (2021), pp. 660–663.
- [55] L. Geronzi, E. Gasparotti, K. Capellini, U. Cella, C. Groth, S. Porziani, A. Chiappa, **S. Celi**, and M.E. Biancolini. “High fidelity fluid-structure interaction by radial basis functions mesh adaption of moving walls: A workflow applied to an aortic valve”. In: *Journal of Computational Science* 51 (2021).
- [56] A. Mariotti, A. Boccadifuoco, **S. Celi**, and M.V. Salvetti. “Hemodynamics and stresses in numerical simulations of the thoracic aorta: Stochastic sensitivity analysis to inlet flow-rate waveform”. In: *Computers and Fluids* 230 (2021).
- [57] F. Mastorci, L. Ait-Ali, P. Festa, M. Martini, L. Gagliardi, G. Calabri, G. La Marca, G. Trivellini, A. Casu, S. Dalmiani, P. Marcheschi, **S. Celi**, and A. Pingitore. “A new web score to predict health status in paediatric patients with chronic diseases: Design and development of the PENSAMI study”. In: *Children* 8.12 (2021).
- [58] A. Pizzuto, G. Santoro, C. Baldi, **S. Celi**, M. Cuman, A.J. Anees, S. Berti, E. Gasparotti, K. Capellini, and A. Clemente. “3D model-guided transcatheter closure of left ventricular pseudoaneurysm: A case series”. In: *Journal of Cardiovascular Medicine* 22.12 (2021), E1–E7.
- [59] M.F. Santarelli, G. Giovannetti, V. Hartwig, **S. Celi**, V. Positano, and L. Landini. “The core of medical imaging: State of the art and perspectives on the detectors”. In: *Electronics (Switzerland)* 10.14 (2021).
- [60] G. Santoro, A. Pizzuto, A. Rizza, M. Cuman, D. Federici, M. Cantinotti, V. Pak, A. Clemente, and **S. Celi**. “Transcatheter Treatment of “Complex” Aortic Coarctation Guided by Printed 3D Model”. In: *JACC: Case Reports* 3.6 (2021), pp. 900–904.
- [61] E. Vignali, E. Gasparotti, K. Capellini, B.M. Fanni, L. Landini, V. Positano, and **S. Celi**. “Modeling biomechanical interaction between soft tissue and soft robotic instruments: importance of constitutive anisotropic hyperelastic formulations”. In: *International Journal of Robotics Research* 40.1 (2021), pp. 224–235.
- [62] E. Vignali, E. Gasparotti, **S. Celi**, and S. Avril. “Fully-Coupled FSI Computational Analyses in the Ascending Thoracic Aorta Using Patient-Specific Conditions and Anisotropic Material Properties”. In: *Frontiers in Physiology* 12 (2021).
- [63] E. Vignali, E. Gasparotti, L. Landini, and **S. Celi**. “Development and realization of an experimental bench test for synchronized small angle light scattering and biaxial traction analysis of tissues”. In: *Electronics (Switzerland)* 10.4 (2021), pp. 1–16.
- [64] M.N. Antonuccio, A. Mariotti, **S. Celi**, and M.V. Salvetti. “Effects of the Distribution in Space of the Velocity-Inlet Condition in Hemodynamic Simulations of the Thoracic Aorta”. In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 12108 LNBI (2020), pp. 63–74.
- [65] F. di Bartolo, M.N. Malik, M. Scaffardi, A. Bogoni, **S. Celi**, P. Ghelfi, and A. Malacarne. “Penetration capability of near infrared Laguerre-Gaussian beams through highly scattering media”. In: *Optics Letters* 45.11 (2020), pp. 3135–3138.
- [66] M.E. Biancolini, K. Capellini, E. Costa, C. Groth, and **S. Celi**. “Fast interactive CFD evaluation of hemodynamics assisted by RBF mesh morphing and reduced order models: the case of aTAA modelling”. In: *International Journal on Interactive Design and Manufacturing* 14.4 (2020), pp. 1227–1238.
- [67] A. Boccadifuoco, A. Mariotti, K. Capellini, **S. Celi**, and M.V. Salvetti. “Uncertainty quantification applied to hemodynamic simulations of thoracic aorta aneurysms: Sensitivity to inlet conditions”. In: *Lecture Notes in Computational Science and Engineering* 137 (2020), pp. 171–192.
- [68] K. Capellini, P. Tripicchio, E. Vignali, E. Gasparotti, L.A. Ali, M. Cantinotti, D. Federici, G. Santoro, F. Alfonzetti, C. Evangelista, C. Tanca, and **S. Celi**. “3D printing and 3D virtual models for surgical and percutaneous planning of congenital heart diseases”. In: *VISIGRAPP 2020 - Proceedings of the 15th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications* 3 (2020), pp. 281–287.
- [69] F. Di Bartolo, M.N. Malik, M. Scaffardi, A. Bogoni, **S. Celi**, and A. Malacarne. “Penetration Depth Increase of near Infrared Vortex Light through Turbid Media”. In: *Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS 2020-May* (2020).
- [70] B.M. Fanni, K. Capellini, M.D. Leonardo, A. Clemente, E. Cerone, S. Berti, and **S. Celi**. “Correlation between LAA morphological features and computational fluid dynamics analysis for non-valvular atrial fibrillation patients”. In: *Applied Sciences (Switzerland)* 10.4 (2020).
- [71] B.M. Fanni, E. Sauvage, **S. Celi**, W. Norman, E. Vignali, L. Landini, S. Schievano, V. Positano, and C. Capelli. “A Proof of Concept of a Non-Invasive Image-Based Material Characterization Method for Enhanced Patient-Specific Computational Modeling”. In: *Cardiovascular Engineering and Technology* 11.5 (2020), pp. 532–543.

- [72] L. Geronzi, E. Gasparotti, K. Capellini, U. Cella, C. Groth, S. Porziani, A. Chiappa, **S. Celi**, and M.E. Biancolini. “Advanced radial basis functions mesh morphing for high fidelity fluid-structure interaction with known movement of the walls: Simulation of an aortic valve”. In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 12142 LNCS (2020), pp. 280–293.
- [73] A. Mariotti, E. Vignali, E. Gasparotti, K. Capellini, **S. Celi**, and M.V. Salvetti. “Comparison between numerical and mri data of ascending aorta hemodynamics in a circulatory mock loop”. In: *Lecture Notes in Mechanical Engineering* (2020), pp. 898–907.
- [74] E. Vignali, F. di Bartolo, E. Gasparotti, A. Malacarne, G. Concistré, F. Chiaramonti, M. Murzi, V. Positano, L. Landini, and **S. Celi**. “Correlation between micro and macrostructural biaxial behavior of ascending thoracic aneurysm: a novel experimental technique”. In: *Medical Engineering and Physics* 86 (2020), pp. 78–85.
- [75] E. Vignali, E. Gasparotti, B.M. Fanni, L. Ait-Ali, V. Positano, L. Landini, and **S. Celi**. “Development of a fully controllable real-time pump to reproduce left ventricle physiological flow”. In: *Lecture Notes in Mechanical Engineering* (2020), pp. 908–919.
- [76] A. Zaccaria, F. Danielli, E. Gasparotti, B.M. Fanni, **S. Celi**, G. Pennati, and L. Petrini. “Left atrial appendage occlusion device: Development and validation of a finite element model”. In: *Medical Engineering and Physics* 82 (2020), pp. 104–118.
- [77] B.M. Fanni, E. Sauvage, C. Capelli, E. Gasparotti, E. Vignali, S. Schievano, L. Landini, V. Positano, and **S. Celi**. “A numerical and 3D printing framework for the in vivo mechanical assessment of patient-specific cardiovascular structures”. In: *2nd International Conference on Simulation for Additive Manufacturing, Sim-AM 2019* (2019), pp. 31–39.
- [78] E. Gasparotti, U. Cella, E. Vignali, E. Costa, G. Soldani, A. Cavallo, P. Losi, M.E. Biancolini, and **S. Celi**. “A combined approach of numerical simulation and additive manufacturing technique for in-silico and in-vitro testing of a 3D printing-based aortic polymeric heart valve”. In: *2nd International Conference on Simulation for Additive Manufacturing, Sim-AM 2019* (2019), pp. 19–30.
- [79] E. Gasparotti, E. Vignali, P. Losi, M. Scatto, B.M. Fanni, G. Soldani, L. Landini, V. Positano, and **S. Celi**. “A 3D printed melt-compounded antibiotic loaded thermoplastic polyurethane heart valve ring design: an integrated framework of experimental material tests and numerical simulations”. In: *International Journal of Polymeric Materials and Polymeric Biomaterials* 68.1-3 (2019), pp. 1–10.
- [80] G. Turini, S. Condino, U. Fontana, R. Piazza, J.E. Howard, **S. Celi**, V. Positano, M. Ferrari, and V. Ferrari. “Software framework for VR-enabled transcatheter valve implantation in unity”. In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 11613 LNCS (2019), pp. 376–384.
- [81] E. Vignali, Z. Manigrasso, E. Gasparotti, B. Biffi, L. Landini, V. Positano, C. Capelli, and **S. Celi**. “Design, simulation, and fabrication of a three-dimensional printed pump mimicking the left ventricle motion”. In: *International Journal of Artificial Organs* 42.10 (2019), pp. 539–547.
- [82] G. Vivoli, E. Gasparotti, M. Rezzaghi, E. Cerone, M. Mariani, L. Landini, S. Berti, V. Positano, and **S. Celi**. “Simultaneous Functional and Morphological Assessment of Left Atrial Appendage by 3D Virtual Models”. In: *Journal of Healthcare Engineering* 2019 (2019).
- [83] S. Berti, L.E. Pastormerlo, **S. Celi**, M. Ravani, G. Trianni, E. Cerone, and G. Santoro. “First-in-Human Percutaneous Left Atrial Appendage Occlusion Procedure Guided by Real-Time 3-Dimensional Intracardiac Echocardiography”. In: *JACC: Cardiovascular Interventions* 11.21 (2018), pp. 2228–2231.
- [84] A. Boccadifuoco, A. Mariotti, K. Capellini, **S. Celi**, and M.V. Salvetti. “Validation of Numerical Simulations of Thoracic Aorta Hemodynamics: Comparison with In Vivo Measurements and Stochastic Sensitivity Analysis”. In: *Cardiovascular Engineering and Technology* 9.4 (2018), pp. 688–706.
- [85] A. Boccadifuoco, A. Mariotti, **S. Celi**, N. Martini, and M.V. Salvetti. “Impact of uncertainties in outflow boundary conditions on the predictions of hemodynamic simulations of ascending thoracic aortic aneurysms”. In: *Computers and Fluids* 165 (2018), pp. 96–115.
- [86] K. Capellini, E. Vignali, E. Costa, E. Gasparotti, M.E. Biancolini, L. Landini, V. Positano, and **S. Celi**. “Computational Fluid Dynamic Study for aTAA Hemodynamics: An Integrated Image-Based and Radial Basis Functions Mesh Morphing Approach”. In: *Journal of Biomechanical Engineering* 140.11 (2018).
- [87] F. Falconi, C. Porzi, A. Bogoni, **S. Celi**, L. Landini, and A. Malacarne. “High-speed 2D-scan for optical coherence tomography”. In: *IET Conference Publications* 2018.CP748 (2018).

- [88] A. Boccadifuoco, A. Mariotti, **S. Celi**, N. Martini, and M.V. Salvetti. "Effects of inlet conditions in the simulation of hemodynamics in a thoracic aortic aneurysm". In: *AIMETA 2017 - Proceedings of the 23rd Conference of the Italian Association of Theoretical and Applied Mechanics 2* (2017), pp. 1706–1724.
- [89] **S. Celi**, N. Martini, L.E. Pastormerlo, V. Positano, and S. Berti. "Multimodality imaging for interventional cardiology". In: *Current Pharmaceutical Design* 23.22 (2017), pp. 3285–3300.
- [90] C. Chiastra, E. Montin, M. Bologna, S. Migliori, C. Aurigemma, F. Burzotta, **S. Celi**, G. Dubini, F. Migliavacca, and L. Mainardi. "Reconstruction of stented coronary arteries from optical coherence tomography images: Feasibility, validation, and repeatability of a segmentation method". In: *PLoS ONE* 12.6 (2017).
- [91] G. Turini, S. Condino, S. Sinceri, I. Tamadon, **S. Celi**, C. Quaglia, M. Murzi, G. Soldani, A. Menciasci, V. Ferrari, and M. Ferrari. "Patient specific virtual and physical simulation platform for surgical robot movability evaluation in single-access robot-assisted minimally-invasive cardiothoracic surgery". In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 10325 LNCS (2017), pp. 211–220.
- [92] A. Boccadifuoco, A. Mariotti, **S. Celi**, N. Martini, and M.V. Salvetti. "Uncertainty quantification in numerical simulations of the flow in thoracic aortic aneurysms". In: *ECCOMAS Congress 2016 - Proceedings of the 7th European Congress on Computational Methods in Applied Sciences and Engineering 3* (2016), pp. 6226–6249.
- [93] A.G. Cerillo, T. Gasbarri, **S. Celi**, M. Murzi, G. Trianni, M. Ravani, M. Solinas, and S. Berti. "Transapical Transcatheter Valve-in-Valve Implantation for Failed Mitral Bioprostheses: Gradient, Symptoms, and Functional Status in 18 High-Risk Patients Up to 5 Years". In: *Annals of Thoracic Surgery* 102.4 (2016), pp. 1289–1295.
- [94] P. Losi, L. Mancuso, T. Al Kayal, **S. Celi**, E. Briganti, A. Gualerzi, S. Volpi, G. Cao, and G. Soldani. "Development of a gelatin-based polyurethane vascular graft by spray, phase-inversion technology". In: *Biomedical Materials (Bristol)* 10.4 (2015).
- [95] **S. Celi** and S. Berti. "In-vivo segmentation and quantification of coronary lesions by optical coherence tomography images for a lesion type definition and stenosis grading". In: *Medical image analysis* 18.7 (2014), pp. 1157–1168.
- [96] **S. Celi** and S. Berti. "Three-dimensional sensitivity assessment of thoracic aortic aneurysm wall stress: a probabilistic finite-element study". In: *European journal of cardio-thoracic surgery* 45.3 (2014), pp. 467–475.
- [97] **S. Celi**, M. Vaghetti, C. Palmieri, and S. Berti. "Superficial coronary calcium analysis by OCT: Looking forward an imaging algorithm for an automatic 3D quantification". In: *International Journal of Cardiology* 168.3 (2013), pp. 2958–2960.
- [98] **S. Celi**, P. Losi, and S. Berti. "Investigation on regional variation of intraluminal thrombus: A mechanical and histological study". In: *Bioinspired, Biomimetic and Nanobiomaterials* 1.3 (2012), pp. 183–194.
- [99] F. Di Puccio and **S. Celi**. "A note on the use of first order quadrilateral elements in axisymmetric analysis". In: *CAD Computer Aided Design* 44.11 (2012), pp. 1083–1089.
- [100] F. Di Puccio, **S. Celi**, and P. Forte. "Review of Experimental Investigations on Compressibility of Arteries and Introduction of a New Apparatus". In: *Experimental Mechanics* 52.7 (2012), pp. 895–902.
- [101] **S. Celi**, F. Di Puccio, and P. Forte. "Advances in finite element simulations of elastosonography for breast lesion detection". In: *Journal of Biomechanical Engineering* 133.8 (2011).
- [102] P. Di Achille, **S. Celi**, F. Di Puccio, and P. Forte. "Anisotropic AAA: Computational comparison between four and two fiber family material models". In: *Journal of Biomechanics* 44.13 (2011), pp. 2418–2426.
- [103] **S. Celi**, P. Di Achille, F. Di Puccio, and M. F. Santarelli. "A Matlab toolbox for morphological analysis and 3D reconstruction of arterial histological sections". In: *International Journal of Tomography and Statistics* 13/W10 (2010). 0973-7294, pp. 38–49.
- [104] **S. Celi**, P. di Achille, F. di Puccio, and M.F. Santarelli. "A matlab toolbox for morphological analysis and 3D reconstruction of arterial histological sections". In: *International Journal of Tomography and Statistics* 13.W10 (2010), pp. 38–49.
- [105] G. Melani, C. Carmignani, **S. Celi**, P. Forte, and G. Di Carlo. "Simulation of the transient dynamic behaviour of an aircraft gearbox by CMS". In: *23rd International Conference on Noise and Vibration Engineering 2008, ISMA 2008 6* (2008), pp. 3597–3609.
- [106] D. Maselli, R. De Paulis, L. Weltert, A. Salica, R. Scaffa, A. Bellisario, A. Mingiano, **S. Celi**, and F. Di Puccio. "A new method for artificial chordae length "tuning" in mitral valve repair: Preliminary experience". In: *Journal of Thoracic and Cardiovascular Surgery* 134.2 (2007). Notice of Correction (DOI:10.1016/j.jtcvs.2007.04.009), pp. 454–459.

BOOK CHAPTERS

- [107] **S. Celi** and K. Capellini. “Aortic biomechanics: from in vivo to in silico”. In: *The aorta at your fingertips: A student textbook*. Ed. by Minerva Medica. 2023, pp. 30–38.
- [108] **Simona Celi**, Margherita Cioffi, Marco Benigno Fanni, Katia Capellini, Emanuele Gasparotti, Emanuele Vignali, Vincenzo Positano, Dorela Haxhiademi, Emiliano Costa, Luigi Landini, Em Daskalopoulos, Mar Piergiovanni, Antonio Dura, Laura Gribaudo, and Mic Whelan. “Advanced non-animal models in biomedical Research”. In: *EUR 30334/5 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-56984-8, doi:10.2760/276664, JRC130702*. 2022.
- [109] **S. Celi**, Conti M., S. Marconi, E. Vignali, F. Auricchio, V. Positano, and L. Landini. “Prototipazione rapida da immagini per una medicina personalizzata”, Book Chapter 18. Immagini biomediche: nuove tendenze in tecnologia, metodi e applicazioni”. In: *Immagini biomediche: nuove tendenze in tecnologia, metodi e applicazioni*. Ed. by Patron. 2018. Chap. 18.
- [110] **S. Celi** and S. Berti. “Biomechanics and FE Modelling of Aneurysm: Review and Advances in Computational Models”. In: ed. by Yasuo Murai. ISBN: 978–953–51–0730–9. InTech, 2012. Chap. 1, pp. 1–24. DOI: 10.5772/3152.
- [111] **S. Celi** and S. Berti. “Biomechanics and FE modelling of aneurysm: review and advances in computational models”. In: *The aorta at your fingertips: A student textbook*. Ed. by INTECH Open Access Publisher. 2012, pp. 1–24.

CONGRESS

- [112] L. Chestnutt, B.M. Fanni, N. Rettig, S. Schievano, **S. Celi**, A. Aggarwal, and C. Capelli. “Patient-specific FE simulation of total cavopulmonary connection: procedure planning and device development”. In: *29th Congress of the European Society of Biomechanics, Edinburgh*. July 2024.
- [113] F. Dell’Agnello, K. Capellini, P. Totaro, F. Frijia, F. Cademartiri, F.A. Recchia, and **S. Celi**. “A workflow for patient-specific CFD simulations of atherosclerotic carotid arteries”. In: *29th Congress of the European Society of Biomechanics, Edinburgh, United Kingdom*. July 2024.
- [114] F. Dell’Agnello, E. Vignali, K. Capellini, M. Scarpolini, E. Gasparotti, and **S. Celi**. “A Dynamic CT Based Pipeline To Assess Hemodynamic Indexes and Wall Stiffness of the Aorta”. In: *9th ECCOMAS Congress*. 2024.
- [115] F. Dell’Agnello, L. Iannetti, P. Totaro, F. Anastasio Recchia, and **S. Celi**. “An automated workflow to assess patient-specific hemodynamics of atherosclerotic carotid arteries”. In: *19th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, CMBBE 2024*. 2024.
- [116] B.M. Fanni, E. Gasparotti, A. Esposito, F. Danielli, F. Berti, S. Pennati, G. Berti, L. Petrini, and **S. Celi**. “Left atrial appendage occlusion: a 3D printed simulator for the patient-specific procedural planning and training”. In: *29th Congress of the European Society of Biomechanics, Edinburgh*. July 2024.
- [117] B.M. Fanni, I. Verdirame, K. Capellini, F. Dell’Agnello, M. Mazzoli, S. Garzia, F. Danielli, F. Berti, G. Pennati, L. Petrini, and **S. Celi**. “An image-based in-silico pipeline for the patient-specific simulation of the left atrial hemodynamics”. In: *29th Congress of the European Society of Biomechanics, Edinburgh*. July 2024.
- [118] S. Garzia, M.A. Scarpolini, M. Mazzoli, K. Capellini, A. Monteleone, F. Cademartiri, and **S. Celi**. “cGAN-based synthetic augmentation for small 4D flow PC-MRA dataset segmentation”. In: *29th Congress of the European Society of Biomechanics, Edinburgh, UK. (Accepted Abstract)*. July 2024.
- [119] E. Gasparotti, B.M. Fanni, M. Dell’Amico, F. Danielli, F. Berti, L. Petrini, G. Pennati, and **S. Celi**. “Design and fabrication of deformable 3D printed model of patient-specific left atrium for PIV investigation”. In: *29th Congress of the European Society of Biomechanics, Edinburgh*. July 2024.
- [120] E. Gasparotti, E. Vignali, D. Haxhiademi, and **S. Celi**. “A new clinical tool for the regulation of ECMO support in patients under cardiac shock”. In: *29th Congress of the European Society of Biomechanics*. June 30– July 3, 2024, Edinburgh, United Kingdom, June 2024.
- [121] M. Mazzoli, B.M. Fanni, L. Ait-Ali, A. Monteleone, and **S. Celi**. “Augmented computational fluid dynamics for Tetralogy of Fallot patients evaluation”. In: *29th Congress of the European Society of Biomechanics, Edinburgh*. July 2024.
- [122] M. Mazzoli, B.M. Fanni, M. A. Scarpolini, F. Dell’Agnello, and **S. Celi**. “An integrated multi-imaging AI-based pipeline to study cardiovascular hemodynamic indices: aortic and pulmonary vessels case studies”. In: *The. Vol. 9th European Congress on Computational Methods in Applied Sciences and Engineering – ECCOMAS Congress 2024, Lisbon*. June 2024.
- [123] M.V. Salvetti, J. Singh, K. Capellini, A. Mariotti, and **S. Celi**. “Effect of the Carotid Geometry on the Onset of Atherosclerotic Plaques”. In: *9th ECCOMAS Congress*. 2024.
- [124] M. Scarpolini, **S. Celi**, and F. Viola. “Data-driven FSI simulation of ventricle and aorta integrating in vivo and in silico data”. In: *16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics*. 2024.
- [125] M. Scarpolini, **S. Celi**, and F. Viola. “Data-driven FSI simulation of ventricle and aorta integrating in vivo and in silico data”. In: *9th ECCOMAS Congress*. 2024.

- [126] E. Vignali, E. Gasparotti, F. Bardi, S. Avril, and **S. Celi**. “Fluid dynamic analysis of AAA phantoms via LED-PIV in a hybrid mock circulatory loop”. In: *29th Congress of the European Society of Biomechanics*. 2024.
- [127] E. Vignali, E. Gasparotti, F. Dell’Agnello, C. Ferrantini, L. Sacconi, F. A. Recchia, and **S. Celi**. “LCE-based actuation of synthetic vessels: experimental and numerical approaches”. In: *29th Congress of the European Society of Biomechanics*. 2024.
- [128] E. Vignali, E. Gasparotti, M. Mazzoli, D. Haxhiademi, and **S. Celi**. “Extra Corporeal Membrane Oxygenation Support For Perfusion In Cardiac Shock: A Computational Analysis”. In: *9th ECCOMAS Congress*. 2024.
- [129] M. Astore, E. Gasparotti, E. Vignali, **S. Celi**, and M. Marino. “Experimental and modelling analyses for understanding of the structure-mechanics relationship of aortic tissue”. In: *XII Annual Meeting of the Italian Chapter of European Society of Biomechanics*. 2023.
- [130] F. Bardi, M. N. Antonuccio, E. Gasparotti, E. Vignali, M. Aguirre, S. Avril, and **S. Celi**. “FSI computational model of a patient specific AAA validated by LED illumintaed PIV”. In: *28th Congress of the European Society of Biomechanics*. 2023.
- [131] F. Bardi, E. Gasparotti, E. Vignali, M. Aguirre, S. Avril, and **S. Celi**. “Validation of FSI simulations against a compliant aortic phantom in a Hybrid Mock Circulatory Loop”. In: *Summer Biomechanics, Bioengineering, Biotransport Conference (SB3C)*. 2023.
- [132] K. Calò, K. Capellini, G. De Nisco, V. Mazzi, E. Gasparotti, D. Gallo, **S. Celi**, and U. Morbiducci. “Modelling aortic flows: impact of wall displacements on large-scale hemodynamic coherence in ascending aorta”. In: *28th Congress of the European Society of Biomechanics, July*. 2023, pp. 9–12.
- [133] K. Capellini, F. Dell’Agnello, E. Gasparotti, E. Vignali, M. Mazzoli, M. A. Scarpolini, F. Cademartiri, and **S. Celi**. “Towards a digital twin for aorta: an in-silico image-based approach coupling numerical simulations and CT-gated images to assess patients specific aortic hemodynamics”. In: *XXIV CONGRESSO SIRC*. Vol. 2023, Imola, 18 -. Oct. 20, 2023.
- [134] K. Capellini, F. Dell’Agnello, E. Gasparotti, E. Vignali, M. Scarpolini, E. Maffei, A. Clemente, F. Cademartiri, and **S. Celi**. “A moving boundary meshless method to investigate thoracic aorta hemodynamics based on CT images and mesh morphing technique”. In: *22nd Computational Fluids Conference (CFC2023), Cannes, France, April*. 2023.
- [135] F. Danielli, F. Berti, B.M. Fanni, E. Gasparotti, **S. Celi**, G. Pennati, and L. Petrini. “On the need of a reliable numerical model to simulate the left atrial appendage occlusion: a finite element study”. In: *28th Congress of the European Society of Biomechanics, Maastricht*. July 2023.
- [136] F. Danielli, B.M. Fanni, E. Gasparotti, L. Petrini, G. Pennati, and F. Berti. “A discussion on strategies for the in silico deployment of left atrial appendage occluders”. In: *18th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Paris*. May 2023.
- [137] F. Dell’Agnello, M. A. Scarpolini, K. Capellini, E. Vignali, E. Gasparotti, F. Cademartiri, and **S. Celi**. “A combined CFD and mesh morphing technique to investigate thoracic aorta hemodynamics”. In: *28th Congress of the European Society of Biomechanics, July*. 2023, pp. 9–12.
- [138] F. Dell’Agnello, M. A. Scarpolini, K. Capellini, E. Vignali, E. Gasparotti, F. Cademartiri, and **S. Celi**. “Effects of wall motion on the hemodynamics of the aorta”. In: *on Experimental and Computational Mechanics, September 20-22*. Ed. by WECM’nd Workshop. Italy: Pisa, 2023, pp. 23–2.
- [139] F. Dell’Agnello, E. Vignali, M. A. Scarpolini, K. Capellini, E. Gasparotti, F. Cademartiri, **S. Celi**, and M. Marino. “A mesh morphing tool for moving boundaries CFD simulations and wall stiffness estimation of the aorta”. In: *XII Annual Meeting of the Italian Chapter of European Society of Biomechanics*. 2023.
- [140] B.M. Fanni, E. Gasparotti, K. Capellini, F. Danielli, F. Berti, S. Berti, G. Pennati, L. Petrini, and **S. Celi**. “A numerical workflow to investigate the hemodynamics effects of the left atrial appendage occlusion”. In: *28th Congress of the European Society of Biomechanics, July*. 2023, pp. 9–12.
- [141] B.M. Fanni, A. Pizzuto, G. Santoro, and **S. Celi**. “A Comprehensive Numerical Workflow for the Image-Based Estimation of In-Vivo Vascular Wall Mechanical Properties”. In: *22nd Computational Fluids Conference (CFC2023), Cannes, France, April*. Apr. 2023.
- [142] F. Galbiati, C. Angeletti, K. Capellini, E. Vignali, C. Morin, S. Avril, E. Costa, and **S. Celi**. “Aortic hemodynamics evaluation based on reduced order models: effect of inlet conditions”. In: *28th Congress of the European Society of Biomechanics*. 2023.
- [143] F. Galbiati, E. Vignali, K. Capellini, C. Morin, S. Avril, E. Costa, and **S. Celi**. “Assessment of the combined effects of valve phenotype and aneurysm progression of ATAA hemodynamics”. In: *28th Congress of the European Society of Biomechanics*. 2023.

- [144] Federica Galbiati, E. Vignali, Katia Capellini, Claire Morin, S. Avril, Emiliano Costa, and **S. Celi**. “Investigating the role of eccentric inlet conditions on hemodynamic results at different stages of aneurysm growth”. In: *Summer Biomechanics, Bioengineering, Biotransport Conference (SB3C)*. 2023.
- [145] S. Garzia, M. A. Scarpolini, K. Capellini, V. Positano, F. Cademartiri, and **S. Celi**. “Deep learning thoracic aorta segmentation for feature extraction and hemodynamic analysis from 3D PC-MRI”. In: *28th Congress of the European Society of Biomechanics*, July. 2023, pp. 9–12.
- [146] E. Gasparotti, B.M. Fanni, K. Capellini, A. Clemente, S. Berti, and **S. Celi**. “Numerical simulations to evaluate the device-related effects in atrial fibrillation patients”. In: *18th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Paris*. May 2023.
- [147] M. Mazzoli, M. A. Scarpolini, B.M. Fanni, K. Capellini, A. Monteleone, L. Ait Ali, and **S. Celi**. “An AI and Statistical Shape Analysis combined framework to extract features in complex cardiovascular structures”. In: *XXIV CONGRESSO SIRC*. Vol. 2023, Imola, 18 -. Oct. 20, 2023.
- [148] M. Mazzoli, M. A. Scarpolini, B.M. Fanni, and **S. Celi**. “A statistical shape modeling framework to correlate morphology and hemodynamics of complex great vessels”. In: *XII Annual Meeting of the Italian Chapter of the European Society of Biomechanics*, Turin. Sept. 2023.
- [149] M. Mazzoli, M. A. Scarpolini, B.M. Fanni, A. Monteleone, F. Cademartiri, and **S. Celi**. “A multi source statistical shape analysis framework for complex cardiovascular structures”. In: *28th Congress of the European Society of Biomechanics, Maastricht*. July 2023.
- [150] M.V. Salvetti, M. Morello, J. Singh, K. Capellini, S. Garzia, A. Mariotti, and **S. Celi**. “Simulation of patient-specific atherosclerotic plaque growth in the carotid arteries”. In: *22nd Computational Fluids Conference (CFC2023)*, Cannes, France, April. 2023.
- [151] J. Singh, K. Capellini, B.M. Fanni, A. Mariotti, M. V. Salvetti, and **S. Celi**. “Numerical simulations to predict the onset of atherosclerotic plaques in carotid arteries”. In: *on Experimental and Computational Mechanics, September 20-22*. Ed. by WECM'nd Workshop. Italy: Pisa, 2023, pp. 23–2.
- [152] E. Vignali, E. Gasparotti, F. Dell’Agnello, K. Capellini, M. A. Scarpolini, F. Cademartiri, and **S. Celi**. “Image-based in vivo estimation of regional strain and stiffness properties of the whole aortic vessel”. In: *28th Congress of the European Society of Biomechanics*. 2023.
- [153] E. Vignali, L. Miglior, E. Gasparotti, A. Ceni, C. Zirafa, D. Haxiademi, L. Frediani, F. Melfi, S. Berti, V. Gervasi, and **S. Celi**. “An application for remote respiratory patterns detection in post-surgery patients”. In: *28th Congress of the European Society of Biomechanics*. 2023.
- [154] M.N. Antonuccio, Bardi F., E. Vignali, E. Gasparotti, Alexander This, Laurence Rouet, Stephane Avril, and **S. Celi**. “Color-doppler based hemodynamics of aortic phantoms”. In: *27th Congress of the European Society of Biomechanics*. June 26-29, 2022, Porto, Portugal, June 2022.
- [155] M.N. Antonuccio, E. Gasparotti, L. Giuggioli, E. Vignali, S. Avril, A. This, L. Rouet, and **S. Celi**. “An experimental/computational approach for fluid dynamic characterization of AAA”. In: *XI Annual Meeting of the Italian Chapter of European Society of Biomechanics*. October 6 – 7, Massa, Italy, Oct. 2022.
- [156] F. Bardi, M. N. Antonuccio, E. Gasparotti, M. Aguirre, S. Avril, E. Vignali, and **S. Celi**. “LED illuminated PIV velocity field characterization in a patient specific aortic aneurysm phantom”. In: *XI Annual Meeting of the Italian Chapter of European Society of Biomechanics*. 2022.
- [157] F. Bardi, E. Gasparotti, E. Vignali, M. Aguirre, Stephan Avril, and **S. Celi**. “A high-power led illuminated piv setup to characterize the flow behaviour in abdominal aortic aneurysm models”. In: *27th Congress of the European Society of Biomechanics*. June 26-29, 2022, Porto, Portugal, June 2022.
- [158] F. Bardi, E. Gasparotti, E. Vignali, M. Aguirre, Stephan Avril, and **S. Celi**. “Mechanics and fluid dynamics characterization of a compliant patient specific aortic phantom in a Hybrid Mock Circulatory Loop”. In: *9th World Congress of Biomechanics*. July 10-14, 2022, Taipei, Taiwan, July 2022.
- [159] K. Calò, K. Capellini, G. De Nisco, D. Gallo, **S. Celi**, and U. Morbiducci. “Investigating the impact of wall distensibility on aortic flow using a network-based approach”. In: *XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics, October 6-7, 2022*. 2022.
- [160] K. Capellini, B.M. Fanni, E. Del Pia, S. Berti, and **S. Celi**. “Computational fluid dynamics evaluation of residual risk of thrombi formation after left atrial appendage occlusion”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online*. July 2022.

- [161] K. Capellini, E. Gasparotti, E. Vignali, B.M. Fanni, M. A. Scarpolini, F. Cademartiri, and **S. Celi**. “Image-based in vivo estimation of aortic local stiffness and hemodynamics”. In: *27th Congress of the European Society of Biomechanics*. 2022.
- [162] K. Capellini, E. Gasparotti, E. Vignali, M. A. Scarpolini, E. Costa, M. E. Biancolini, U. Cella, F. Cademartiri, and **S. Celi**. “A comparative study between CFD, FSI and radial basis functions mesh morphing technique based on biomedical images for aortic hemodynamic studies”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online*. 2022.
- [163] F. Danielli, F. Berti, B.M. Fanni, E. Gasparotti, G. Pennati, L. Petrini, and **S. Celi**. “A comprehensive study to develop a numerical model of the left atrial appendage occlusion”. In: *XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics*. Oct. 2022.
- [164] B.M. Fanni, M. N. Antonuccio, G. Santoro, and **S. Celi**. “An indirect and non-invasive methodology to assess patient-specific elastic properties of great vessels from magnetic resonance imaging”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online*. July 2022.
- [165] B.M. Fanni, M.N. Antonuccio, G. Santoro, A. Mariotti, M.V. Salvetti, and **S. Celi**. “Effect of uncertainties of image-based material properties of great vessels on vascular deformation”. In: *The 8th European Congress on Computational Methods in Applied Sciences and Engineering – ECCOMAS Congress 2022, Oslo*. July 2022.
- [166] B.M. Fanni, K. Capellini, A. Benvenuti, S. Berti, and **S. Celi**. “Effects of pulmonary veins on the hemodynamics of the left atrial appendage: a computational fluid dynamics investigation”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online*. July 2022.
- [167] Benigno Marco Fanni, E. Gasparotti, Katia Capellini, E. Vignali, Giuseppe Santoro, and **S. Celi**. “Image-based characterization of large vessels Integrating in-vitro and in-silico methods”. In: *27th Congress of the European Society of Biomechanics*. June 26-29, 2022, Porto, Portugal, June 2022.
- [168] S. Garzia, M. A. Scarpolini, K. Capellini, V. Positano, A. Monteleone, F. Cademartiri, and **S. Celi**. “AI-based pipeline for features extraction and hemodynamic analysis from 3D PC-MRI”. In: *XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics, October 6-7, 2022*. 2022.
- [169] E. Gasparotti, S. Quartieri, E. Vignali, F. Bardi, Lazzeri R., and **S. Celi**. “Numerical and experimental evaluation of the bulge test In the characterisation of the biological soft tissues”. In: *27th Congress of the European Society of Biomechanics*. June 26-29, 2022, Porto, Portugal, June 2022.
- [170] E. Gasparotti, S. Quartieri, E. Vignali, F. Bardi, Lazzeri R., and **S. Celi**. “Numerical simulations to evaluate the performance of the bulge test technique in the mechanical characterization of soft biological tissues”. In: *9th World Congress of Biomechanics*. July 10-14, 2022, Taipei, Taiwan, July 2022.
- [171] E. Gasparotti, E. Vignali, D. Haxiademi, F. Bardi, M. Scolaro, P. A. Del Sarto, and **S. Celi**. “Bench to bedside: in-silico and in-vitro evaluation of shocked patients under the ECMO support”. In: *XI Annual Meeting of the Italian Chapter of European Society of Biomechanics*. 2022.
- [172] E. Gasparotti, E. Vignali, M. Mariani, S. Berti, and **S. Celi**. “Effects of the Cardioband procedure on the regurgitant mitral valve”. In: *11th European Solid Mechanics Conference*. July 4-8, 2022, Galway, Ireland, July 2022.
- [173] E. Gasparotti, E. Vignali, M. Mariani, S. Berti, and **S. Celi**. “Finite element simulations of the cardioband procedure For the treatment of the regurgitant mitral valve”. In: *27th Congress of the European Society of Biomechanics*. June 26-29, 2022, Porto, Portugal, June 2022.
- [174] E. Gasparotti, E. Vignali, M. Scolaro, D. Haxiademi, P. del Sarto, and **S. Celi**. “In vitro and in silico evaluation of effects of ecmo treatment on patient specific aorta under cardiogenic shock conditions”. In: *9th World Congress of Biomechanics*. July 10-14, 2022, Taipei, Taiwan, July 2022.
- [175] A. Mariotti, M. N. Antonuccio, B.M. Fanni, M. Morello, M. V. Salvetti, and **S. Celi**. “CFD simulations and uncertainty quantification to investigate aorta coarctations”. In: *XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Massa*. Oct. 2022.
- [176] A. Mariotti, E. Gasparotti, E. Vignali, P. Marchese, **S. Celi**, and M.V. Salvetti. “Integrating in-vivo Data in CFD Simulations and in in-vitro Experiments of the Hemodynamic in Healthy and Pathologic Thoracic Aorta”. In: *9th International Work-Conference on Bioinformatics and Biomedical Engineering, IWBBIO*. June 27-30, 2022, Gran Canaria, Spain, June 2022.
- [177] A. Mariotti, E. Vignali, E. Gasparotti, P. Marchese, M. Morello, M.V. Salvetti, and **S. Celi**. “Hemodynamics in healthy and pathological thoracic aorta: integration of in-vivo data in CFD simulations and in-vitro experiments”. In: *8th World Congress in Computational Mechanics and ECCOMAS Congress*. June 5-9, 2022, Oslo, Norway, June 2022.
- [178] M. A. Scarpolini, M. Mazzoli, F. Bardi, K. Capellini, V. Positano, and **S. Celi**. “A non rigid registratio algorithm to build statistical shape model of thoracic aorta, together with aortic arch and supraortic vessels”. In: *27th Congress of the European Society of Biomechanics*. 2022.

- [179] M. A. Scarpolini, M. Mazzoli, K. Capellini, and **S. Celi**. “A correlation study between morphological parameters and hemodynamics indices: an integrated deep learning and statistical shape modeling”. In: *Virtual Physiology Human Conference, VPH2022, Porto - Portugal 6-9 September. 2022.*
- [180] M. A. Scarpolini, M. Mazzoli, S. Garzia, A. Clemente, A. Monteleone, K. Capellini, and **S. Celi**. “Deploying digital twins of the cardiovascular system in clinics: a deep learning-based automatized framework”. In: *XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Massa, October 6-7, 2022. 2022.*
- [181] E. Vignali, E. Gasparotti, S. Avril, and **S. Celi**. “Linearization of material behavior for patient-specific aTAA fluid-structure analysis: the Small on Large deformation approach”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online. 2022.*
- [182] E. Vignali, E. Gasparotti, F. Bardi, S. Prizio, D. Haxhiademi, P. Del Sarto, and **S. Celi**. “Development of a physical twin for cardiovascular life-support devices analysis and comparison”. In: *27th Congress of the European Society of Biomechanics. 2022.*
- [183] E. Vignali, E. Gasparotti, F. Bardi, M. Scolaro, D. Haxhiademi, P. Del Sarto, and **S. Celi**. “An experimental analysis of cardiovascular support devices for cardiogenic shock: a mock-circulatory loop for ECMO and Impella devices”. In: *9th World Congress of Biomechanics, Taipei, Taiwan – Online. 2022.*
- [184] E. Vignali, E. Gasparotti, K. Capellini, F. Bardi, M. A. Scarpolini, F. Cademartiri, and **S. Celi**. “In-vivo estimation of local aortic stiffness via ECG-gated CT data”. In: *11th European Solid Mechanics Conference (ESMC22). 2022.*
- [185] M. N. Antonuccio, S. Perondi, B.M. Fanni, K. Capellini, and **S. Celi**. “CFD/UQ integrated approach for patient-specific studies of aortic coarctation”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [186] F. Bardi, E. Gasparotti, E. Vignali, M. Aguirre, S. Avril, and **S. Celi**. “A hardware-in-the-loop strategy for fluid dynamic characterization of cardiovascular systems”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [187] K. Capellini, E. Gasparotti, E. Vignali, L. Ait Ali, M. Cantinotti, P. Tripicchio, M. Murzi, and **S. Celi**. “A clinical trial to assess the effectiveness of 3D models for complex cardiac surgical planning”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [188] K. Capellini, E. Gasparotti, E. Vignali, B.M. Fanni, U. Cella, E. Costa, M. E. Biancolini, and **S. Celi**. “An image-based CFD and RBF morphing approach: an alternative for standard FSI technique”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [189] F. Danielli, A. Zaccaria, E. Stretti, M. F. Zaccone, E. Gasparotti, B.M. Fanni, K. Capellini, **S. Celi**, G. Pennati, and L. Petrini. “In-silico modeling of the left atrial appendage occlusion: definition of a validated path”. In: *26th Congress of the European Society of Biomechanics, July 2021.*
- [190] F. Danielli, A. Zaccaria, E. Stretti, M.F. Zaccone, E. Gasparotti, B.M. Fanni, K. Capellini, **S. Celi**, G. Pennati, and L. Petrini. “In-silico modeling of the left atrial appendage occlusion: definition of a validation path”. In: *26th Congress of the European Society of Biomechanics. July 11-14, 2021, Milan, Italy, July 2021.*
- [191] B.M. Fanni, E. Vignali E. Gasparotti, C. Capelli, V. Positano, and **S. Celi**. “An MRI-based patient-specific RCR estimation of pulmonary bifurcation using in-vitro and in-silico approaches”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. July 2021.*
- [192] B.M. Fanni, E. Gasparotti, E. Vignali, C. Capelli, V. Positano, and **S. Celi**. “A parametric equation for the non-invasive estimation of the elastic properties of materials”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [193] B.M. Fanni, E. Vignali, C. Capelli, V. Positano, and **S. Celi**. “An integrated in-vitro and in-silico workflow to study the pulmonary bifurcation hemodynamics”. In: *32nd Parallel Computational Fluid Dynamics Conference (ParCFD), Nice – Online. May 2021.*
- [194] E. Gasparotti, E. Vignali, E. Cerone, S. Berti, and **S. Celi**. “Digital twin of the CardioBand procedure for mitral valve regurgitation: in silico approach and validation”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [195] E. Gasparotti, E. Vignali, M. Scolaro, P. A. Del Sarto, **S. Celi**, and D. Haxhiademi. “In vitro study of effects of ECMO on patient specific aorta under cardiogenic shock conditions”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021. 2021.*
- [196] L. Geronzi, E. Gasparotti, C. Groth, U. Cella, M.E. Biancolini, and **S. Celi**. “Patient-specific prosthetic aortic valve: a high-fidelity Approach to reduce simulation time”. In: *26th Congress of the European Society of Biomechanics. July 11-14, 2021, Milan, Italy, July 2021.*

- [197] Laura Iannetti, E. Gasparotti, S. Berti, and **S. Celi**. “Development of CFD technique to simulate the hemodynamic effects of the Cardioband implantation”. In: *17th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*. September 7-9, 2021, Bonn, Germany, Sept. 2021.
- [198] M. A. Scarpolini, K. Capellini, S. Longo, M. Odino, D. Morbidelli, M. Cioffi, E. Costa, V. Positano, and **S. Celi**. “From CTA to wall shear stress prediction on aorta: a fully automatic deep learning pipeline”. In: *26th Congress of the European Society of Biomechanics, Milan – Online. July 2021*. 2021.
- [199] E. Vignali, S. Avril, and **S. Celi**. “Fully-Coupled Fluid-Structure Interaction simulation of Ascending Thoracic Aorta based on the Small On Large Theory”. In: *32nd Parallel Computational Fluid Dynamics Conference (ParCFD), Nice – Online*. 2021.
- [200] E. Vignali, S. Avril, and **S. Celi**. “Patient-Specific linearization of anisotropic hyperelastic models for FSI analyses of Aortic Aneurysms”. In: *26th Congress of the European Society of Biomechanics*. 2021.
- [201] E. Vignali, E. Gasparotti, A. Mariotti, M. V. Salvetti, and **S. Celi**. “In-silico and in-vitro uncertainty quantification of inlet conditions of the aortic complex”. In: *26th Congress of the European Society of Biomechanics*. 2021.
- [202] M. N. Antonuccio, A. Mariotti, M. V. Salvetti, B.M. Fanni, K. Capellini, E. Sauvage, C. Capelli, and **S. Celi**. “Towards the translation of patient-specific CFD simulations into clinics: an integrated approach for a non-invasive study of aortic coarctation”. In: *Virtual Physiological Human Conference (VPH2020), Paris*. 2020.
- [203] F. Di Bartolo, M.N. Malik, M. Scaffardi, A. Bogoni, **S. Celi**, and A. Malacarne. “Penetration depth increase of near infrared vortex light through turbid media”. In: vol. Part F181-CLEO-AT 2020. 2020.
- [204] E. Stretti, M.F. Zaccone, A. Zaccaria, F. Danielli, E. Gasparotti, B.M. Fanni, K. Capellini, **S. Celi**, G. Pennati, and L. Petrini. “In-silico model of Left Atrial Appendage Occlusion: comparison with implantation in 3d printed patient specific geometry”. In: *International CAE Conference*. November 30 – December 4, Vicenza, Italy, Nov. 2020.
- [205] A. Zaccaria, F. Danielli, E. Gasparotti, B.M. Fanni, F. Migliavacca, G. Pennati, **S. Celi**, and L. Petrini. “A validation path for a left atrial appendage occluder”. In: *Virtual Physiological Human Conference (VPH2020), Paris*. Aug. 2020.
- [206] M. N. Antonuccio, B.M. Fanni, K. Capellini, E. Sauvage, A. Mariotti, C. Capelli, and **S. Celi**. “An integrated approach of uncertainty quantification and 3D MRI techniques in guiding CFD analysis for a non-invasive study of aortic coarctation”. In: *Workshop on Frontiers of Uncertainty Quantification in Fluid Dynamics*. Sept. 2019, pp. 11–13.
- [207] M. N. Antonuccio, A. Mariotti, B.M. Fanni, K. Capellini, E. Sauvage, C. Capelli, and **S. Celi**. “An integrated CFD and UQ approach to assess hemodynamic alteration in the Aortic Coarctation”. In: *International CAE conference and exhibition (CAE2019)*. 2019, Vicenza, Italy: October 28-29, 2019.
- [208] F. Di Bartolo, E. Vignali, A. Malacarne, E. Gasparotti, V. Positano, L. Landini, and **S. Celi**. “Optomechanical characterization of soft biological tissues: an integration of biaxial test and sals technique”. In: *European Society of Biomechanics*. 2019.
- [209] K. Capellini, U. Cella, E. Costa, E. Gasparotti, B.M. Fanni, M. E. Biancolini, and **S. Celi**. “A coupled CFD and RBF mesh morphing technique as surrogate for one-way FSI study”. In: *Italian Chapter of European Society of Biomechanics, Bologna*. Vol. 2019. Oct. 1, 2019, p. 30.
- [210] K. Capellini, U. Cella, E. Costa, E. Gasparotti, E. Vignali, B.M. Fanni, and **S. Celi**. “A novel FSI approach for the study of the aorta hemodynamics: an integrated imaged based and RBF mesh morphing technique”. In: *International CAE conference and exhibition (CAE2019)*. 2019, Vicenza, Italy: October 28-29, 2019.
- [211] K. Capellini, B.M. Fanni, and **S. Celi**. “Applicazione dell’uncertainty quantification in campo cardiovascolare: esempi con codice open-source”. In: *Workshop: Uncertainty quantification in modern science, Pisa*. 2019.
- [212] K. Capellini, B.M. Fanni, E. Gasparotti, M. Di Leonardo, E. Cerone, V. Positano, L. Landini, S. Berti, and **S. Celi**. “In-silico assessment of thrombosis risk”. In: *a CFD study of left atrial and left atrial appendage*. IX Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Bologna, Oct. 2019.
- [213] F. Danielli, E. Gjini, A. Zaccaria, E. Gasparotti, B.M. Fanni, L. Petrini, **S. Celi**, and G. Pennati. “Numerical Model of a Left Atrial Appendage Occluder”. In: *International CAE Conference*. October 28 – 29, Vicenza, Italy, Oct. 2019.
- [214] B.M. Fanni, K. Capellini, and **S. Celi**. “Applicazione dell’uncertainty quantification in campo cardiovascolare: esempi con codice commerciale”. In: *Workshop: Workshop: Uncertainty quantification in modern science, Pisa*, Sept. 2019.
- [215] B.M. Fanni, K. Capellini, E. Gasparotti, E. Vignali, V. Positano, Cerone E. Landini, S. Berti, and **S. Celi**. “L’in-silico e l’in-vitro per il planning clinico della procedura di chiusura percutanea dell’auricola sinistra”. In: *Italian Digital Biomanufacturing Network*. Vol. 3rd National Congress, Pisa. Oct. 2019.

- [216] B.M. Fanni, E. Gasparotti, K. Capellini, C. Capelli, E. Vignali, V. Positano, and **S. Celi**. “A novel image-based formulation for enhanced patient-specific in silico simulations of cardiovascular interventions”. In: *International CAE conference and exhibition (CAE2019)*. 2019, Vicenza, Italy: October 28-29, 2019.
- [217] B.M. Fanni, E. Sauvage, C. Capelli, E. Gasparotti, E. Vignali, S. Schievano, L. Landini, V. Positano, and **S. Celi**. “A numerical and 3D printing framework for the in vivo mechanical assessment of patient-specific cardiovascular structures”. In: *2nd International Conference on Simulation for Additive Manufacturing, Sim-AM*. 2019.
- [218] B.M. Fanni, E. Sauvage, K. Capellini, L. Landini, V. Positano, C. Capelli, and **S. Celi**. “A corrected formulation for the image-based inferring of patient-specific material properties”. In: *IX Annual Meeting of the Italian Chapter of the European Society of Biomechanics*. Oct. 2019.
- [219] B.M. Fanni, E. Sauvage, **S. Celi**, L. Landini, S. Schievano, V. Positano, and C. Capelli. “A modified formulation of the QA method for inferring materials properties for enhanced patient-specific computational models”. In: *BioMedEng19 Conference, London*. Sept. 2019.
- [220] B.M. Fanni, E. Sauvage, S. Schievano, L. Landini, **S. Celi**, V. Positano, and C. Capelli. “Indirect evaluation of material properties of large blood vessels based on in silico and in vitro models”. In: *25th Congress of the European Society of Biomechanics (ESB2019)*, Wien. July 2019.
- [221] E. Gasparotti, U. Cella, E. Vignali, E. Costa, G. Soldani, A. Cavallo, P. Losi, M. E. Biancolini, and **S. Celi**. “A combined approach of numerical simulation and additive manufacturing technique for in-silico and in-vitro testing of a 3D printing-based aortic polymeric heart valve”. In: *2nd International Conference on Simulation for Additive Manufacturing, Sim-AM*. 2019.
- [222] E. Gasparotti, M. Cioffi, V. Positano, E. Vignali, B.M. Fanni, K. Capellini, D. Haxhiademi, E. Costa, S. Berti, L. Landini, and **S. Celi**. “Analysis of alternative methods and models for research in cardiovascular disease”. In: *2nd Centro*. Vol. 3R Annual Meeting. June 2019.
- [223] E. Gasparotti, E. Vignali, K. Capellini, D. Haxhiademi, G. Bianchi, B.M. Fanni, L. Landini, V. Positano, and **S. Celi**. “Sviluppo di un banco prova paziente specifico per lo studio in-vitro della fluidodinamica dell’arco aortico”. In: *Italian Digital Biomanufacturing Network*. Vol. 3rd National Congress, Pisa. Oct. 2019.
- [224] E. Gasparotti, E. Vignali, U. Cella, L. Geronzi, E.o Costa, and **S. Celi**. “A novel FSI-RBF mesh morphing environment to design a new polymeric aortic valve”. In: *International CAE Conference*. October 28 – 29, Vicenza, Italy, Oct. 2019.
- [225] Emanuele Gasparotti, Emanuele Vignali, Elisa Cerone, Sergio Berti, Vincenzo Positano, Luigi Landini, and **Simona Celi**. “In-silico healthcare: first human simulations of Cardioband® procedure for mitral regurgitation”. In: *Italian Chapter of the European Society of Biomechanics*. Bologna, Italy, Oct. 2019.
- [226] A. Mariotti, K. Capellini, E. Gasparotti, **S. Celi**, and M.V. Salvetti. “Comparison between numerical and MRI data of ascending aorta hemodynamic in a circulatory mock loop”. In: *The Italian Association of Theoretical and Applied Mechanics*. Rome, Italy, Sept. 2019.
- [227] A. Mariotti, **S. Celi**, K. Capellini, and M. V. Salvetti. “Stochastic analysis of the effect of inlet conditions in the hemodynamics simulation of a thoracic aortic aneurysm”. In: *Workshop on Frontiers of Uncertainty Quantification in Fluid Dynamics*. Sept. 2019, pp. 11–13.
- [228] E. Vignali, F. Di Bartolo, E. Gasparotti, A. Malacarne, V. Positano, L. Landini, and **S. Celi**. “In-silico evaluation of a patient-specific ATAA case through experimental mechano-microstructural characterization”. In: *International CAE conference and exhibition*. 2019.
- [229] E. Vignali, E. Gasparotti, A. Mariotti, K. Capellini, D. Haxhiademi, G. Bianchi, B.M. Fanni, V. Positano, L. Landini, M. V. Salvetti, and **S. Celi**. “Development of a custom mock circulatory loop for in-vitro study of patient specific aortic branches”. In: *International Society for Mechanical Circulatory Support -27th annual meeting 2019*. 2019.
- [230] E. Vignali, F. Poli, F. Di Bartolo, E. Gasparotti, A. Malacarne, V. Positano, L. Landini, and **S. Celi**. “Biaxial and optomechanical characterization of soft tissues: a novel setup and experimental tests”. In: *IX Annual Meeting of the Italian Chapter of European Society of Biomechanics*. 2019.
- [231] A. Zaccaria, E. Gasparotti, B.M. Fanni, F. Migliavacca, G. Pennati, L. Petrini, and **S. Celi**. “Finite element model of a left atrial appendage occlusion device”. In: *IX Annual Meeting of the Italian Chapter of the European Society of Biomechanics*, Bologna. Oct. 2019.
- [232] K. Capellini, B.M. Fanni, E. Gasparotti, E. Vignali, D. Sabatino, M. Di Leonardo, S. Berti, L. Landini, V. Positano, and **S. Celi**. “The role of simulations for LAA closure procedure: from planning to post-procedural analysis”. In: *International CAE conference and exhibition*. 2018, Vicenza, Italy: October 8-9, 2018.

- [233] **S. Celi**, B.M. Fanni, E. Gasparotti, K. Capellini, E. Vignali, M. Di Leonardo, E. Cerone, L. E. Pastormerlo, U. Paradossi, V. Positano, L. Landini, and S. Berti. "A computational framework for personalized blood flow analysis and device implantation to optimize LAA closure procedure". In: *CSI Focus LAA*. Vol. 2018, Frankfurt. Nov. 2018.
- [234] B.M. Fanni, C. Capelli, K. Capellini, E. Bianchini, N. Di Lascio, L. Landini, V. Positano, and **S. Celi**. "3D printed models for the mechanical characterization of cardiovascular structures". In: *Italian Digital Biomanufacturing Network (IDBN2018) – II Conference & III Thematic Conference ESB-ITA: 3D Printing and Biomechanics*, Pavia. Nov. 2018.
- [235] B.M. Fanni, **S. Celi**, E. Gasparotti, E. Vignali, K. Capellini, S. Schievano, L. Landini, C. Capelli, and V. Positano. "A combined in silico and in vitro image-based approach for the mechanical characterization of patient-specific cardiovascular structures". In: *International CAE conference and exhibition*, Vicenza. Oct. 2018.
- [236] B.M. Fanni, E. Gasparotti, F. Faita, N. Di Lascio, S. Schievano, L. Landini, **S. Celi**, V. Positano, and C. Capelli. "An integrated image-based framework for the mechanical characterization of patient-specific blood vessels". In: *Virtual Physiological Human Conference (VPH2018)*, Zaragoza - Spain. Sept. 2018.
- [237] B.M. Fanni, E. Gasparotti, E. Vignali, K. Capellini, G. Vivoli, M. Mariani, M. Rezzaghi, L. Landini, V. Positano, **S. Celi**, and S. Berti. "Importance of left atrium fluid dynamics for the planning of LAA closure procedure: an integrated computational fluid dynamics and morphological study". In: *European Heart booktitle*. Vol. 39 (Issue Supplement 1):1290. 2018.
- [238] Benigno Marco Fanni, E. Gasparotti, F. Faita, Nicole Di Lascio, Silvia Schievano, Luigi Landini, **S. Celi**, Vincenzo Positano, and Claudio Capelli. "Image-based mechanical characterization of large blood vessels for patient-specific simulations". In: *8th World Congress of Biomechanics*. Dublin, Ireland, July 2018.
- [239] E. Gasparotti, E. Vignali, K. Capellini, B.M. Fanni, A. G. Cerillo, S. Berti, L. Landini, V. Positano, and **S. Celi**. "Digital twin in healthcare: development of an integrated imaging and finite element model of Cardioband procedure for the treatment of mitral regurgitation". In: *International CAE conference and exhibition*. 2018, Vicenza, Italy: October 8-9, 2018.
- [240] E. Gasparotti, E. Vignali, G. Soldani, P. Losi, M. Scatto, and **S. Celi**. "Melt Compounded Biocompatible Thermoplastic Polyurethane (TPU) for the Engineering of 3D printed Aortic Heart Valve Ring: Design, Fabrication, Testing and Simulation". In: *International Society for Biomedical Polymers and Polymeric Biomaterials*. Krakow, Poland, July 2018.
- [241] E. Gasparotti, E. Vignali, G. Vivoli, A. G. Cerillo, S. Berti, L. Landini, V. Positano, and **S. Celi**. "Towards a patient-specific finite element simulation of Cardioband procedure for the treatment of mitral regurgitation". In: *World Congress of Biomechanics (WCB2018)*, Dublin. 2018.
- [242] C. Groth, E. Costa, S. Porziani, **S. Celi**, K. Capellini, M. Rochette, V. Morgenthaler, and M. E. Biancolini. "The medical digital twin assisted by Reduced Order Models and Mesh Morphing". In: *International CAE conference and exhibition*. 2018, Vicenza, Italy: October 8-9, 2018.
- [243] Z. Manigrasso, E. Gasparotti, B. Biffi, E. Vignali, S. Schievano, L. Landini, V. Positano, C. Capelli, and **S. Celi**. "A novel 3D printed bioinspired cardiac pneumatic pump: from design to numerical and experimental study". In: *Virtual Physiology Human Conference (VPH2018)*, Zaragoza - Spain, 5-7 September. 2018.
- [244] Zaira Manigrasso, Emanuele Gasparotti, Benedetta Biffi, Emanuele Vignali, Silvia Schievano, Luigi Landini, Vincenzo Positano, Claudio Capelli, and **Simona Celi**. "Design of a novel 3D printed mock cardiac pump: in-silico and experimental evaluation". In: *Proceedings of 2th Italian Digital Biomanufacturing Network Congress*. Pavia, Italy, Sept. 2018.
- [245] E. Vignali, E. Gasparotti, K. Capellini, P. Losi, M. Murzi, P. A. Farneti, L. Landini, V. Positano, and **S. Celi**. "Ascending thoracic aortic FE simulation by integrating patient-specific data from imaging, mechanical properties and histological data". In: *World Congress of Biomechanics (WCB2018)*, Dublin. 2018.
- [246] E. Vignali, E. Gasparotti, and Z. Manigrasso. "A numerical and experimental approach for the design of a novel 3D printed bioinspired cardiac pneumatic pump". In: *International CAE conference and exhibition*. 2018.
- [247] E. Vignali, E. Gasparotti, Z. Manigrasso, B. Biffi, K. Capellini, B.M. Fanni, S. Schievano, L. Landini, V. Positano, C. Capelli, and **S. Celi**. "A numerical and experimental approach for the design of a novel 3D printed bioinspired cardiac pneumatic pump". In: *International CAE conference and exhibition*. 2018, Vicenza, Italy: October 8-9, 2018.
- [248] E. Vignali, E. Gasparotti, M. Scatto, P. Losi, B.M. Fanni, K. Capellini, L. Landini, V. Positano, and **S. Celi**. "3D Printing of an antibiotic-loaded heart valve ring prosthesis in thermoplastic polyurethane: fabrication, testing and simulation". In: *Italian Digital Biomanufacturing Network (IDBN2018)*. 2018.
- [249] E. Vignali, N. Martini, P. Losi, K. Capellini, D. Della Latta, F. Di Bartolo, L. Landini, V. Positano, and **S. Celi**. "Towards non-invasive assessment of human aortic tissue microstructure: Diffusion Tensor Imaging for collagen fiber detection". In: *National Congress of Bioengineering (GNB2018)*. 2018.

- [250] K. Capellini, E. Costa, M. E. Biancolini, S. Porziani, E. Gasparotti, V. Positano, L. Landini, and **S. Celi**. “Studio parametrico della progressione dell’aneurisma dell’aorta mediante tecniche di mesh morphing”. In: *Analisi e Calcolo*. Vol. 83. 2017, pp. 20–25.
- [251] K. Capellini, E. Costa, M. E. Biancolini, E. Vignali, V. Positano, L. Landini, and **S. Celi**. “An image-based and RBF mesh morphing CFD simulation for aTAA hemodynamics”. In: *VII Annual Meeting of the Italian Chapter of European Society of Biomechanics*. Sept. 2017.
- [252] B.M. Fanni, E. Gasparotti, **S. Celi**, V. Positano, F. Faita, N. Di Lascio, L. Landini, S. Schievano, and C. Capelli. “Image-based mechanical characterization of large blood vessels”. In: *VII Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Rome*. Sept. 2017.
- [253] E. Gasparotti, E. Vignali, K. Capellini, G. Vivoli, A. G. Cerillo, V. Positano, S. Berti, L. Landini, and **S. Celi**. “A FE tool to simulate a transcatheter anchor-based system for mitral valve regurgitation”. In: *VII Annual Meeting of the Italian Chapter of European Society of Biomechanics*. Sept. 2017.
- [254] E. Gasparotti, E. Vignali, Katia Capellini, Giorgia Vivoli, Alberto Giuseppe Cerillo, Vincenzo Positano, S. Berti, Luigi Landini, and **S. Celi**. “A FE tool to simulate a trans-catheter anchor-based system for mitral valve regurgitation”. In: *VII Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Rome*. 2017.
- [255] E. Gasparotti, G. Vivoli, A.G. Cerillo, S. Berti, L. Landini, and **S. Celi**. “An integrated framework for a new patient-specific mitral annuloplasty procedure: from medical images to numerical simulation”. In: *III. International Conference on Biomedical Technology*. Hannover, Germany, Nov. 2017.
- [256] E. Vignali, K. Capellini, **S. Celi**, P. Losi, G. Vivoli, E. Cerone, V. Positano, L. Landini, M. Murzi, and S. Berti. “A morphological and mechano-biological comparison between ascending thoracic aneurysms with bicuspid and tricuspid via in-vivo and ex-vivo investigation”. In: *European Heart booktitle*. Vol. 38(Suppl. 1): (P3975). 2017, pp. 825–826.
- [257] E. Vignali, K. Capellini, P. Losi, M. Murzi, P. Farneti, V. Positano, L. Landini, and **S. Celi**. “A morphological and histomechanical study for ascending aorta aneurysms in BAV and TAV patients”. In: *23rd Congress of European Society of Biomechanics*. 2017.
- [258] G. Vivoli, E. Gasparotti, M. Rezzaghi, M. Mariani, V. Positano, S. Berti, L. Landini, and **S. Celi**. “3D left atrial appendage modelling: a multimodal imaging approach”. In: *Italian Chapter of the European Society of Biomechanics*. Rome, Italy, Sept. 2017.
- [259] G. Vivoli, E. Gasparotti, M. Rezzaghi, M. Mariani, V. Positano, S. Berti, L. Landini, and **S. Celi**. “3D multimodal image framework for left atrial appendage closure”. In: *CSI LAA Congress*. Frankfurt, Germany, Nov. 2017.
- [260] G. Vivoli, E. Gasparotti, M. Rezzaghi, M. Mariani, V. Positano, S. Berti, L. Landini, and **S. Celi**. “Multimodal 3D image fusion to support percutaneous left atrial appendage closure”. In: *Proceedings of 38th National Congress Italian Society of Interventional Cardiology*. Milan, Italy, Oct. 2017.
- [261] **S. Celi** and S. Berti. “3D FE simulations of atherosclerotic coronary vessel on in-vivo OCT-based models”. In: *ESB*. Vol. 45(1). 2012, S143.
- [262] **S. Celi** and S. Berti. “FE simulations of 3D atherosclerotic vessels by means of OCT images”. In: *ESB-Ita, GNB*. ISBN: 978 88 555 3182-5. 2012.
- [263] **S. Celi** and S. Berti. “FE simulations on the effect of regional variations of material properties and wall thickness on AAA”. In: *ESB-Ita, GNB*. ISBN: 978 88 555 3182-5. 2012.
- [264] **S. Celi** and S. Berti. “Semiautomatic *in-vivo* segmentation and quantification of coronary lesions by OCT images for a lesion type definition and stenosis grading”. In: vol. -. under-review. 2012, pp. -.
- [265] **S. Celi**, G.L. Di Girolamo, D. Della Latta, and D. Chiappino. “Design and characterization of a non-homogeneous elastosonographic breast phantom using PVA-C gel”. In: *ESB-Ita, GNB*. ISBN: 978 88 555 3182-5. 2012.
- [266] **S. Celi**, P. Losi, and S. Berti. “Towards regional ILT variation in abdominal aortic aneurysms: integration between experimental data and computational finite element analyses”. In: *European Heart Journal*. Vol. 33. 2012, p. 193.
- [267] **S. Celi**, M.S. Parri, and S. Berti. “An automatic segmentation and 3D reconstruction of OCT images for the evaluation of coronary pathologies”. In: *European Heart Journal*. Vol. 33. 2012, p. 192.
- [268] **S. Celi**, M.S. Parri, and S. Berti. “Use of OCT images and Finite Element simulations for coronary plaque characterization in patients with CAD”. In: *EuroPCR*. 2012.
- [269] **S. Celi**, P. Losi, and S. Berti. “Probabilistic FE simulations to predict AA rupture risk: integration with mechanical and histological thrombus characterization”. In: *Proceedings Euromat (CD)*. 2011.

- [270] **S. Celi**, M. Vaghetti, C. Palmieri, S. Kull, F. Marchi, and S. Berti. “The first patient-specific finite element model of the rotational atherectomy”. In: *ESC CD*. Vol. 32 (Suppl). 2011, p. 347.
- [271] **S. Celi** and S. Berti. “How to predict TAA rupture risk”. In: *2nd International Meeting on Aortic Diseases (IMAD)*. Vol. 1. 1. 2010, p. 93.
- [272] **S. Celi**, S. Berti, M. Mariani, F. Di Puccio, and P. Forte. “Investigation on the effect of the wall thickness in rupture risk estimation of AAA by a probabilistic finite element approach”. In: *European Society of Cardiology (ESC)*. Vol. 31 (Supp). 1. 2010, p. 284.
- [273] **S. Celi**, P. Losi, R. Troiani, and S. Berti. “Finite element simulations of abdominal aneurysm rupture-risk assessment: from patient-specific studies to a virtual library definition”. In: *XXV SICCH*. 2010, p. CD.
- [274] **S. Celi**, F. Di Puccio, and P. Forte. “Simulation of elastosonography on an ideal anthropomorphic breast model”. In: *European Society of Biomechanics (ESB)*. Vol. 1. 1. 2010, p. CD.
- [275] **S. Celi**, F. Di Puccio, P. Forte, and S. Berti. “FE sensitivity analyses to estimate the role of the thrombus in an aortic aneurysm”. In: *European Society of Biomechanics (ESB)*. Vol. 1. 1. 2010, p. CD.
- [276] **S. Celi**, M. Vaghetti, and S. Berti. “An integrated FE-OCT approach to investigate the effects of rotational atherectomy on the coronary wall stress”. In: *Endocardiac Biomechanics Research*. Vol. 1. 1. 2010, p. CD.
- [277] **S. Celi**, M. Vaghetti, C. Palmieri, S. Kull, and S. Berti. “Simulazione della procedura PTCRA mediante approccio FEM-OCT: primo studio patient-specific”. In: *XXXI GISE*. 2010, in press.
- [278] **S. Celi**, S. Berti, P. Forte, F. Di Puccio, and M. Mariani. “Analisi agli Elementi Finiti per la valutazione del rischio di rottura degli aneurismi dell’aorta toracica ascendente: effetto dello spessore di parete”. In: *XXX GISE*. Vol. 1. 1. 2009.
- [279] **S. Celi**, S. Berti, M. Mariani, F. Di Puccio, and P. Forte. “3D Finite Element analyses of thoracic aneurysm: a sensitivity study for rupture risk evaluation”. In: *IFC-CNR*. Vol. 1. 1. 2009, in press.
- [280] **S. Celi**, S. Berti, M. Mariani, F. Di Puccio, and P. Forte. “Investigation on additional parameters for thoracic arc aneurysm rupture risk estimation by probabilistic finite element approach”. In: *European Society of Cardiology (ESC)*. Vol. 30 (Supp). 1. 2009, p. 493.
- [281] **S. Celi**, F. Di Puccio, and S. Ferri. “Analytical and numerical investigation on first order quadrilateral elements for axisymmetric FE analyses: comparison between Ansys and Abaqus codes”. In: *Ace-X*. Vol. 1. 1. 2009, p. 200.
- [282] **S. Celi**, F. Di Puccio, and P. Forte. “Finite element simulation of elastosonography applied to breast tumours”. In: *Ace-X*. Vol. 1. 1. 2009, p. 103.
- [283] **S. Celi**, F. Di Puccio, and P. Forte. “Probabilistic finite element simulations of elastosonography for breast lesions detection”. In: *ICCB*. Vol. 1. 1. 2009, p. 160.
- [284] **S. Celi**, F. Di Puccio, P. Forte, S. Berti, and M. Mariani. “Influenza dei parametri morfologici sul rischio di rottura dell’aneurisma dell’aorta”. In: *AIAS*. Vol. 1. 1. 2009, in press.
- [285] **S. Celi**, F. Di Puccio, P. Forte, S. Berti, and M. Mariani. “Rupture-risk evaluation of aortic aneurysms by finite element probabilistic analysis”. In: *ICCB*. Vol. 1. 1. 2009, p. 159.
- [286] S. Kull, **S. Celi**, S. Berti, E. Briganti, P. Losi, D. Spiller, S. Tonlorenzi, and G. Soldani. “Endotelializzazione in vitro di protesi vascolari di piccolo diametro: uso della metodica optical coherence tomography per il monitoraggio della crescita cellulare”. In: *XXX GISE*. Vol. 1. 1. 2009.
- [287] S. Kull, **S. Celi**, S. Berti, E. Briganti, P. Losi, D. Spiller, S. Tonlorenzi, and G. Soldani. “Pre-implant evaluation of tissue engineered small diameter vascular grafts with Optical Coherence Tomography: preliminary results on test-bench”. In: *1st International Conference on Tissue Engineering*. Vol. 1. 1. 2009, 1–8 (CD).
- [288] P. Di Achille, **S. Celi**, and F. Di Puccio and M. F. Santarelli. “Reconstruction of arterial 3D fe models from histological images”. In: *GNB*. Vol. 1. 1. 2008, pp. 637–638.
- [289] **S. Celi**, S. Berti, F. Di Puccio, P. Forte, and A. Ripoli. “Quando un aneurisma si rompe? il ruolo delle analisi strutturali mediante elementi finiti”. In: *GISE*. Vol. 1. 1. 2008, p. 175.
- [290] **S. Celi** and F. Di Puccio. “Comparison between natural and synthetic chordae tendinea under uniaxial tests.” In: *Journal of Biomechanics*. Vol. 41(S1). 2008, S153.
- [291] **S. Celi** and F. Di Puccio. “Comparison between natural and synthetic chordae tendineae under uniaxial tests”. In: *Journal of Biomechanics*. Vol. 41. 1. 2008, S153.

- [292] **S. Celi** and F. Di Puccio. “Proposal of a procedure for the analysis of mechanical test on chordae tendineae.” In: *8th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*. 978-0-9562121-0.8. 2008, pp. 1–6.
- [293] **S. Celi**, F. Di Puccio, and P. Di Achille. “Stars: a Matlab program for morphological analysis of arterial histological section.” In: *8th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*. 978-0-9562121-0.8. 2008, pp. 1–6.
- [294] **S. Celi**, F. Di Puccio, and P. Forte. “Investigation on residual stress in arteries by probabilistic FEM analysis”. In: *GNB*. Vol. 1. 1. 2008, pp. 467–468.
- [295] **S. Celi**, F. Di Puccio, P. Forte, and F. Faita. “Indagine FEM probabilistica sull’affidabilità della tecnica elastografica per il riconoscimento di tumori”. In: *XXXVII Convegno Nazionale AIAS*. Vol. 1. 1. 2008, 10 pp.
- [296] G. Melani, C. Carmignani, **S. Celi**, and P. Forte. “Simulation of the transient dynamic behaviour of an aircraft gearbox by CMS”. In: *International conference on noise and vibration engineering*. 2008, pp. 3597–3609.
- [297] L. Tiberi, V. Castelli, **S. Celi**, F. Di Puccio, P. Bajona, and L. Lazzeri. “Investigation on the mechanical properties of sutures for chordae tendineae replacement”. In: *GNB*. Vol. 1. 1. 2008, pp. 637–638.
- [298] F. Tramacere, O. Tricinci, C. Ciaponi, **S. Celi**, F. Di Puccio, and M. G. Cascone. “Mechanical properties of natural chordae tendineae”. In: *GNB*. Vol. 1. 1. 2008, pp. 471–472.
- [299] **S. Celi**, F. Di Puccio, and P. Forte. “Analisi FEM probabilistica dell’intervento di angioplastica”. In: *XXXVI Convegno Nazionale AIAS*. Vol. 1. 1. 10 pp. 2007, p. 66236.
- [300] **S. Celi**, F. Di Puccio, P. Bajona, and D. Maselli. “Mechanical testing of a new suture configuration for the replacement of chordae.” In: *Journal of Biomechanics*. Vol. 39. 2006, S619.
- [301] **S. Celi**, F. Di Puccio, and P. Forte. “Mechanical testing for the evaluation of arteries compressibility.” In: *Journal of Biomechanics*. Vol. 39(S1). 2006, S622.
- [302] **S. Celi**, F. Di Puccio, and P. Forte. “Sensitivity of angioplasty effects to vessel material properties by probabilistic analysis.” In: *II International Conference on Computational Bioengineering*. Vol. 1. 2005, pp. 567–578.
- [303] **S. Celi**, F. Di Puccio, P. Forte, and L. Spadoni. “Investigation on residual stress effect in FE simulations of balloon angioplasty”. In: *Summer Bioengineering Conference*. Vol. 1. 2005, pp. 66236–66236.

GDPR

In compliance with the Italian legislative Decree no. 196 dated 30/06/2003 and GDPR (EU Regulation 2016/679), I hereby authorize you to use and process my personal details contained in this document.

Massa, May 20, 2024

Simona Celi