Editor's Letter. Special issue on bioengineering innovations at Bioengineering Laboratory of the Federal University of Minas Gerais

Orlando Santiago Jr.[1], Rudolf Huebner[2]
[1]Dental School, Arnaldo Jansen Faculty, Belo Horizonte, MG, Brazil
[2]Graduate Program in Mechanical Engineering, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil
[1]Corresponding author
E-mail: [1]*osjofm@gmail.com*, [2]*rudolf@ufmg.br*

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Dear Authors, Readers,

It is with great satisfaction that we present this issue dedicated to the Bioengineering Laboratory (LABBIO) of the Federal University of Minas Gerais. Bioengineering can be seen as the application of engineering principles to the development of technologies to be used in different areas such as biology, medicine, dentistry, physiotherapy and sports sciences, aiming to create innovative solutions.

LABBIO has been working for more than 20 years in the development of advanced research in bioengineering. The research projects developed in the laboratory are coordinated and executed by an interdisciplinary research team that includes researchers from the areas of biology, health, sport and engineering. The team has extensive experience in developing research in the areas of cardiovascular engineering, assistive technology, rehabilitation engineering, development of instruments and devices for diagnosis and therapy. One of LABBIO's objectives is to transform academic excellence into innovation, which can be seen in its scientific production and the number of patents filed and granted. Registers with the Mechanical Engineering Postgraduate Program more than 70 doctoral and master's works, establishing a collaboration network inside and outside the University, made up of entrepreneurs, companies and government institutions.

LABBIO has stood out in research that covers the following lines of investigation:

• Cardiovascular Engineering: Studying the flow of blood through heart valves, pumps, arterial filters and catheters.

• Assistive Technology: Developing devices and solutions to improve the quality of life of people with physical disabilities.

• Photobiomodulation and Photodynamic Therapy: Exploring the use of light (Laser or LED) to stimulate biological processes and assist in the treatment of superficial injuries.

• Biomimicry: Taking inspiration from nature to design more efficient and adaptable devices and materials.

• Medical Devices: Developing equipment and instruments for clinical and surgical use.

The team believes that this research can contribute significantly to the advancement of bioengineering, resulting in improved quality of people's lives. In this issue, we will present some of the research carried out by LABBIO, coordinated by Professor Rudolf Huebner, from the mechanical engineering department at UFMG.

I would like to thank the authors, reviewers and collaborators who made this issue of the journal possible. I hope this publication will be a source of knowledge and inspiration for everyone interested in bioengineering.

Good reading!

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Orlando Santiago Júnior is a Ph.D. in Mechanical Engineering (Department of Mechanical Engineering) Universidade Federal de Minas Gerais Belo Horizonte, MG, Brazil. Now he works at dental office and is Associate professor at School of Dentistry at Faculdade Arnaldo Jansen, and School of Dentistry at Unicentro Promove, Belo Horizonte, MG, Brazil. His current research interest includes Jaw Functional Orthopedics, Temporomandibular Disorders, Dental Occlusion and Bite Force Measurement, bioengineering, nanomaterials.

Rudolf Huebner received Ph.D. degree in Mechanical Engineering from Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil, in 2003. Now he works at the Mechanical Engineering Department of Universidade Federal de Minas Gerais. His current research interests include Mathematical Modelling and Numerical Simulation applied to Bioengineering (Cardiovascular Engineering, Dentistry, Physiotherapy).