

BIOMEDICAL ENGINEERING BIOMEDIZINISCHE TECHNIK

*Joint journal of the German Society for Biomedical
Engineering in VDE and the Austrian and Swiss Societies
for Biomedical Engineering and the German Society of Biomaterials*

EDITOR-IN-CHIEF

Jens Haueisen, Ilmenau, Germany

ASSOCIATE EDITORS

Peter Augat, Murnau, Germany

Daniel Baumgarten, Hall, Austria

Thomas Deserno, Braunschweig, Germany

Frédéric Heim, Mulhouse, France

Wilhelm Jahnen-Dechent, Aachen, Germany

Steffen Leonhardt, Aachen, Germany

Klaus Radermacher, Aachen, Germany

Erik Schkommodau, Muttens, Switzerland

Thomas Stieglitz, Freiburg, Germany

Gudrun Wagenknecht, Jülich, Germany

EDITORIAL BOARD

Olaf Dössel, Karlsruhe, Germany

Pamela Habibovic, Maastricht, Netherlands

Branislav Jaramaz, Pittsburgh

Marc Kraft, Berlin, Germany

Thomas Lenarz, Hannover, Germany

Harry van Lenthe, Leuven, Belgium

Benny Lo, London, UK

Luca Mainardi, Milano, Italy

Silvestro Micera, Lausanne, Switzerland

Thomas Penzel, Berlin, Germany

Andrea Robitzki, Karlsruhe, Germany

Klaus-Peter Schmitz, Rostock, Germany

Tobias Schaeffter, Berlin, Germany

Jess G. Snedeker, Zurich, Switzerland

Leif Sörnmo, Lund, Sweden

Nobuhiko Sugano, Osaka, Japan

Jürgen Werner, Bochum, Germany

Werner Wolf, Neubiberg, Germany

DE GRUYTER

Please see the journal's homepage for Abstracting & Indexing Services information.

Joint Journal of the German Society for Biomedical Engineering in VDE and the Austrian and Swiss Societies for Biomedical Engineering and the German Society of Biomaterials.

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions or liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 0013-5585 · e-ISSN 1862-278X · CODEN BMZTA7

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/bmt.

RESPONSIBLE EDITOR Prof. Dr. Jens Haueisen, Institut für Biomedizinische Technik und Informatik (BMTI), Technische Universität Ilmenau, Gustav-Kirchhoff-Str. 2, 98693 Ilmenau, Germany. E-mail: jens.haueisen@tu-ilmenau.de

PUBLISHER Walter de Gruyter GmbH, Berlin/Boston, Genthiner Straße 13, 10785 Berlin, Germany

JOURNAL COORDINATOR Torsten Krüger, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05–176, Fax: +49 (0)30 260 05–352, E-mail: bmt.editorial@degruyter.com

ADVERTISEMENTS E-mail: anzeigen@degruyter.com

© 2024 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING TNQ Tech Private Limited, Chennai, India

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

Questions about General Product Safety Regulation: productsafety@degruyterbrill.com



Contents

Reviews

Yi Tang, Ping Shi and Hongliu Yu

Perception of defecation intent: applied methods and technology trends — 535

Marianne Hollensteiner, Andreas Traweger and Peter Augat

Anatomic variability of the human femur and its implications for the use of artificial bones in biomechanical testing — 551

Research Articles

Veljko Ilić, Vladimir Biočanin, Đorđe Antonijević, Božana Petrović, Vukoman Jokanović, Dragan Ilić, Vesna Danilović, Nina Japundžić-Žigon, Smiljana Paraš, Jovana Milutinović and Sanja Milutinović-Smiljanić
The intensity of subacute local biological effects after the implantation of ALBO-OS dental material based on hydroxyapatite and poly(lactide-co-glycolide): *in vivo* evaluation in rats — 563

Gonca Deste Gökay, Gülsüm Gökçimen, Perihan Oyar and Rukiye Durkan

Comparison of fatigue lifetime of new generation CAD/CAM crown materials on zirconia and titanium abutments in implant-supported crowns: a 3D finite element analysis — 575

Nader A. Rahman Mohamed

Breaking the silence: empowering the mute-deaf community through automatic sign language decoding — 585

Wei Zhu and Cuilian Zhao

The assessment method of lip closure ability based on sEMG nonlinear onset detection algorithms — 597

Mostafa Sayahkarajy and Hartmut Witte

A multi-chamber soft robot for transesophageal echocardiography: continuous kinematic matching control of soft medical robots — 609

Xue Fu, Chunxiao Chen, Zhiying Chen, Jie Yu and Liang Wang
Radiogenomics based survival prediction of small-sample glioblastoma patients by multi-task DFFSP model — 623