Philips Lehrstuhl für Medizinische Informationstechnik
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2012

Publications, Patents, Talks

Buchbeiträge mit Beteiligung des Lehrstuhls 2012 / *Book Chapters*

[1]   A. K. Abbas, K. Heimann, K. Jergus, T. Orlikowsky, S, Leonhardt, „Neonatal Infrared Thermography Monitoring", in: W. Chen, S. Bambang Oetomo, L. Feijs (eds.), "Neonatal Monitoring Technologies: Design for Integrated Solutions", IGI Global, 701 East Chocolate Avenue, Suite 200, Hershey, PA 17033-1240, USA, p. 84 – 124, ISBN-13: 978-1466609754, URL: http://www.igi-global.com/book/neonatal-monitoring-technologies/60777

[2]   M. Ulbrich, J. Mühlsteff, P. Paluchowski and S. Leonhardt, "Erythrocyte orientation and lung conductivity analysis with a high temporal resolution FEM model for bioimpedance measurements", in: O. Kanoun (ed.), Lecture Notes on Impedance Spectroscopy: Measurement, Modeling and Applications, p. 71 – 76, Volume 3, ISBN 978-0415644303, CRC Press, Boca Raton, 2012.

[3]   M. Czaplik, R. Rossaint, "Objective measurement and monitoring of pain", In: "Advances in Medicine and Biology, Volume 61", ISBN 978-1-62417-319-6, Nova Science Publishers, Inc, NY, USA, 2012.

[4]   J. Benzko, B. Ibach, B. Marschollek, M. Köny, S. Leonhardt, K. Radermacher, "Innovative Kommunikations- und Netzwerkarchitekturen für den modular adaptierbaren integrierten OP-Saal", in: W. Niederlag, H. U. Lemke, G. Strauß, H. Feußner (eds.), „Der digitale Operationssaal", Reihe Health Academy, Nr. 17, pp. 45-63, Dresden, 2012.

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mit anonymem Gutachterwesen /
Papers in peer-reviewed Journals

[1]   I. Elixmann, M. Walter, M. Kiefer, S. Leonhardt, „Simulation of existing and future electromechanical shunt valves in combination with a model for brain fluid dynamics", *Acta Neurochir Suppl.* 2012;113:77-81.

[2]   M. Czaplik, B. Eilebrecht, R. Walocha, M. Walter, P. Schauerte, S. Leonhardt, R. Rossaint, "The Reliability and Accuracy of a Noncontact Electrocardiograph System for Screening Purposes", *Anesth Analg.* 2012 Feb;114(2):322-7. Epub 2011 Nov 21.

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[8]   B. Venema, N. Blanik, V. Blazek, H. Gehring, A. Opp, S. Leonhardt, "Advances in Reflective Oxygen Saturation Monitoring with a Novel In-ear Sensor System: Results of a Human Hypoxia Study", IEEE *Transactions on Biomedical Engineering 59(7):* 2003 - 2010, 2012. doi: 10.1109/TBME.2012.2196276

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[64]   I. M. Elixmann, S. Jetzki, M. Weinzierl, M. Oertel, S. Leonhardt, "Elektronisches Implantat zur Hydrozephalustherapie", Tag der Medizinischen Forschung, Aachen, 20. November 2012.

[65]   F. Hirsch, S. Bergrath, M. Schneiders, R. Rossaint, B. Siegers, D. Wielpütz, M. Czap-
lik, S.K. Beckers, J.C. Brokmann, "Telemedizinische Unterstützung von Rettungs-
assistenten – das Projekt TemRas (Telemedizinisches Rettungsassistenzsystem)",
Jahrestagung der Deutschen Gesellschaft für interdisziplinäre Notfall- und Akut-
medizin, November 2012.

Eingeladene Vorträge 2012 /
Invited Talks and Lectures 2012

[1]   S. Leonhardt, "Techniques for Contact-free Monitoring - Current Applications and Challenges", Shenzhen Institute of Advanced Technology (SIAT), Chinese Academy of Science. Shenzhen, China, Jan. 4th, 2012.

[2]   V. Blazek, „Recent research & development activities in the research group Biomedical Optics at MedIT / RWTH Aachen University", IITM, Chennai, India, Jan. 7th, 2012.

[3]

[4]   V. Blazek, „Rapid fluid shifts along the body axis under space conditions (micro- and hyper-gravity – An experiment during the 7th and 8th German parabolic flight mission", Amrita Univ., Coimbatore, India, Jan. 10th, 2012.

[5]   S. Leonhardt, "Einführung: Was ist EIT?", 22. Symposium Intensivmedizin + Intensivpflege, Messe und Congress Centrum Bremen, 23. Februar 2012.

[6]   S. Leonhardt, "Hämodynamisches Monitoring mit EIT", 22. Symposium Intensiv-medizin + Intensivpflege, Messe und Congress Centrum Bremen, 23. Februar 2012.

[7]   S. Leonhardt, „iShunt – Next Generation Shunt Technology", Clustertreff Medizin-technik, Forum MedTech Pharma, RAUMEDIC AG, Helmbrechts, 25. April 2012.

[8]   S. Leonhardt, M. Czaplik, „"Elektrische Impedanztomographie – technische Grund-lagen und mögliche klinische Anwendungen", 175. Konstanzer Klin.-Radiol. Kolloquium, Klinikum Konstanz, 26. April 2012.

[9]   S. Leonhardt, „Elektrische Impedanztomographie - Anforderungen für den Einsatz in der klinischen Routine", Dräger-Satellitensymposium "*Elektrische Impedanz-tomographie - Die Evolution einer Idee*", 59. Jahrestagung der Deutschen Gesell-schaft für Anästhesiologie und Intensivmedizin (DAC 2012), Congress Center *Leipzig,* 5. Mai 2012.

[10]   S. Leonhardt, „Smart textiles and textile electrodes - the MedIT experience", Body Sensor Networks Conference (BSN 2012) – Workshop No 1 of the ESPRIT MANAGEMENT MEETING, Royal Geographic Society, London, UK., May 9th, 2012.

[11]   S. Leonhardt, "Techniques for Contact-free Monitoring - Current Applications and Challenges", 4th *International Conference "Smart Materials, Structures and Systems",* Montecatini Terme, Tuscany, Italy, June 10th - 14th, 2012.

[12]   S. Leonhardt, „Electrical Impedance Tomography (EIT): Technical Background and Clinical Implications to assessing Perfusion and Ventilation", IAMPOV 2012, Yale University, New Haven, CT, USA, 29 June – 1 July 2012.

[13]   N. Blanik, A. K. Abbas, B. Venema, V. Blazek, S. Leonhardt, „Non-contact Imaging of Heart and Lung Activity by Infrared Thermography and Photoplethysmography", Symposium on Innovations and Applications of Monitoring Perfusion, Oxygenation

and Ventilation (IAMPOV 2012), Yale University, New Haven, CT, USA, June 29th – July 1st, 2012.

[14] V. Blazek, "Proposal for Photoplethysmographic Detection of Peripheral Venous Oxygen Saturation Level", World Congress Int. Union of Angiology, Prague, CZ, **Keynote lecture,** July 3th, 2012.

[15] S. Leonhardt, "Electrical Impedance Tomography for Hemodynamic Monitoring", invited talk and paper, 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, CA, USA, Aug. 28th – Sep. 1st, 2012.

[16] S. Leonhardt, "Non-contact Monitoring Techniques - Principles and Applications", invited talk and paper, 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, CA, USA, Aug. 28th – Sep. 1st, 2012.

[17] S. Leonhardt, "Are we ready for Real-world Applications of Non-contact ECG Sensing?", invited talk at Mini-Symposium, 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, CA, USA, Aug. 28th – Sep. 1st, 2012.

[18] C. Brüser, "Multi-Channel Optical Sensor-Array for Measuring Ballistocardiograms and Respiratory Activity in Bed", 34th Annual International Conference of the IEEE EMBS, San Diego, CA, USA, Aug. 28th – Sep. 1st, 2012.

[19] V. Blazek, „Fortschritte in der Quantifizierung des externen kompressionsdrucks – Konzept einer vollautomatischen Langzeit-Überwachung", 54. Jahrestagung der Deutschen Gesellschaft für Phlebologie, Lübeck, 19.09.2012.

[20] S. Leonhardt, „Automatische Kontrolle der Beatmung: Wie viel ist gewünscht? Wie viel ist notwendig?", Hauptstadtkongress der DGAI für Anästhesiologie und Intensivtherapie (HAI 2012), Berlin, 13. – 15. Sep. 2012.

[21] S. Leonhardt, "Elektrische Impedanztomographie - Übertragbarkeit der Ergebnisse von Erwachsenen auf Kinder", Jahreskongress der Gesellschaft für Neonatologie und pädiatrische Intensivmedizin (Annual Congress of the German Society for Neonatology and Pediatric Intensive Care, GNPI), Hamburg, 15.09.2012.

[22] M. Ulbrich, S. Leonhardt, „Ein Anzug überwacht unsere Ernährung! Moderne Textilien zur Überwachung von Wasserhaushalt und Ernährung", 12. Kongress eHealtCare.ch, Nottwil, Schweiz, 19.-20. Sep. 2012.

[23] V. Blazek, „Erste Schritte zur photoplethysmographischen Bestimmung der periphervenösen Sauerstoffsättigung", 54. Jahrestagung der Deutschen Gesellschaft für Phlebologie, Lübeck, 20.09.2012.

[24] V. Blazek, „Neinvazívne sledovanie saturácie kyslíka v periférnych žilách – nový fotopletyzmografický prístup", XX. Annual Congress, Slovak Angiological Society, Tatranska Lomnica, SK, Sept.26th, 2012.

[25]   M. Czaplik, S. Leonhardt, „Electrical Impedance Tomography", 23rd Meeting of the European Society for Computing and Technology in Anesthesia and Intensive Care (ESCTAIC), Timisoara, Romania, Oct 3rd - 6th, 2012.

[26]   V. Blazek, „Optische Messmethoden für das Kraftfahrzeug", MEDICA Health It Forum, Düsseldorf, 15.11.2012

[27]   S. Leonhardt, „Kontaktfreie Messmethoden für die Medizin", 4. Dresdner Medizin-technik-Symposium, Dresden, 3. - 5. Dezember 2012.

[28]   S. Leonhardt, „Techniques for Contact-free Monitoring - Current Applications and Challenges", Bauman Moscow State Technical University, Moscow, Russia, 19. Dez. 2012.

[29]   S. Leonhardt, „Electrical Impedance Tomography for Hemodynamic Monitoring", Bauman Moscow State Technical University, Moscow, Russia, 19. Dez. 2012.