

# Dr.-Ing. André Stollenwerk

## Kontakt



Gruppenleiter Medizintechnik  
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## Mitgliedschaften

- Vorsitzender des [GMA Fachausschuss 7.26](#) „Schnittstelle für die Eingabe von aktuellen Wartungsinformationen bei Condition Monitoring“
- Mitglied im Gemeinsamer Fachausschuss [AUTOMED](#) der DGBMT und des GMA
- Mitglied in der Leitungsrunde zum Pandemie-Beatmungsgerät [PV1000](#)

## Betreute Abschlussarbeiten

- Implementierung von eingebetteter stereoskopischer Triangulation für einen 3D-Scanner
- Entwicklung eines Versuchsaufbaus zur optischen Desinfektionsvalidierung
- Entwicklung eines dezentral implementierten Sicherheitskonzeptes für intensivmedizinische Anwendungen
- Auslegung einer pulsatilen Ansteuerungsstrategie für eine Blutpumpe
- Rezirkulationsmessung bei extrakorporaler Lungenunterstützung
- Modellierung und Analyse von konkurrierenden Sicherheitszielen in einer intensivmedizinischen Anwendung

- RTOS with Matlab/Simulink for a Medical Application
- Entwicklung eines Zeitsynchronisationsverfahrens für ein intensivmedizinisches, verteiltes System
- Entwicklung und Spezifikation eines CAN Protokolls für sicherheitskritische medizintechnische Anwendungen
- Funktionale Erweiterung des VMware vSphere Systems
- Integration von Hardwareabstraktion und Hardwareansteuerung im eingebetteten Echtzeitbetriebssystem ChibiOS
- Integration modellbasierter Sicherheitsmechanismen für die extrakorporale Lungenunterstützung in ein eingebettetes RTOS
- Erarbeitung und Integration von modellbasierten Sicherheitsmaßnahmen für eine intensivmedizinische Anwendung
- Entwicklung mobiler Multiplattform-Clients für ein Buchungssystem
- Entwicklung einer Metrik zur Bewertung verschiedener Hardwareplattformen für medizintechnische Anwendungen
- Erarbeitung einer mikrowellengeregelten chemischen Reaktionsführung
- Modellbasierte Diagnose eines Oxygenators für die Extrakorporale Membranoxygenierung
- Portierung einer Diagonalpumpensteuerung auf ein eingebettetes Betriebssystem mit Unterstützung modell-basierter Sicherheitsmaßnahmen
- Modellierung und Regelung des Blutflusses einer Diagonalpumpe bei der extrakorporalen Oxygenierung
- Entwurf und Validierung einer auf den Wirkungsgrad optimierten Regelungsstrategie zur Ansteuerung einer piezoelektrisch betriebenen Pumpe für automobiler Anwendungen
- Thermodynamische Modellbildung eines Handdesinfektionsprozesses
- Tiefeninformationsabhängige Bildfusion in einer optischen Desinfektionsvalidierung
- Entwicklung und Umsetzung eines normgerechten Testkonzepts für die Bedienoberfläche eines Notfall-Beatmungsgeräts
- Erarbeitung einer Ansteuerungsautomatik für eine Unabhängige Energieversorgung

## Publikationen

[JSS+22]

[PDFBIB](#)

Janisch, T., Stollenwerk, A., Siekmann, U., and Kopp, R., "Treatment of children with Hyperbaric Oxygenation (HBOT) : an Europe-wide survey", *Minerva pediatrics*, vol. 74, iss. 2, pp. 116-120, 2022

### **Treatment of children with Hyperbaric Oxygenation (HBOT) : an Europe-wide survey**

#### **Bibtex entry :**

```
@article { JSS+22,  
  author = { Janisch, Thorsten and Stollenwerk, André and Siekmann,  
            Ulrich and Kopp, R{"u}dger },  
  title = { Treatment of children with Hyperbaric Oxygenation (HBOT)
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:
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journal = { Minerva pediatrics },
publisher = { Edizioni Minerva Medica },
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volume = { 74 },
number = { 2 },
year = { 2022 },
address = { Torino },
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doi = { 10.23736/S2724-5276.20.05741-2 },
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http://publications.rwth-aachen.de/record/787714/files/787714.pdf },
}

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[FFK+21]

[PDFBIB](#)

Fonck, S., Fritsch, S. J., Kowalewski, S., Hensen, R., and Stollenwerk, A., "Algorithmic distinction of ARDS and Heart Failure in ICU data from medical embedded systems by using a computer model", *IFAC-PapersOnLine*, vol. 54, iss. 4, pp. 135-140, 2021

## Algorithmic distinction of ARDS and Heart Failure in ICU data from medical embedded systems by using a computer model

### Bibtex entry :

```

@article { FFK+21,
  author = { Fonck, Simon and Fritsch, Sebastian Johannes and
Kowalewski,
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  journal = { IFAC-PapersOnLine },
  publisher = { Elsevier },
  pages = { 135-140 },
  volume = { 54 },
  number = { 4 },
  year = { 2021 },
  address = { Frankfurt ; M{"u"}nchen [u.a.] },
  issn = { 2405-8963 },
  organization = { 4th IFAC Conference on Embedded Systems,
Computational
  Intelligence and Telematics in Control, Valenciennes
  (France), 2021-07-05 - 2021-07-07 },
  doi = { 10.1016/j.ifacol.2021.10.023 },
  typ = { PUB:(DE-HGF)16 },

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reportid = { RWTH-2021-10204 },  
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```

[LKL+21]

[PDFBIB](#)

Lamberti, M., Kopp, R., Lübke, C., Leonhardt, S., Walter, M., and Stollenwerk, A., "Safety and Automation Concepts for Artificial Impantable Lungs - SmartLungControl", *Biomedical engineering*, vol. 66, iss. s1, 2021

## Safety and Automation Concepts for Artificial Impantable Lungs - SmartLungControl

### Bibtex entry :

```
@article { LKL+21,  
  author = { Lamberti, Michael and Kopp, R{"u}diger and L{"u}bke,  
Cavan  
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  title = { Safety and Automation Concepts for Artificial Impantable  
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  address = { Berlin [u.a.] },  
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  organization = { 55nd DGBMT Annual Conference on Biomedical  
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[MBF+21]

[PDFBIB](#)

Marx, G., Bickenbach, J., Fritsch, S. J., Kunze, J. B., Maassen, O., Deffge, S., Kistermann, J., Haferkamp, S. D., Lutz, I., Voellm, N. K., Lowitsch, V., Polzin, R., Sharafutdinov, K., Mayer, H., Kuepfer, L., Burghaus, R., Schmitt, W., Lippert, J., Riedel, M., Barakat, C., Stollenwerk, A., Fonck, S., Putensen, C., Zenker, S., Erdfelder, F., Grigutsch, D., Kram, R., Beyer, S., Kampe, K., Gewehr, J. E., Salman, F., Juers, P., Kluge, S., Tiller, D., Wisotzki, E., Gross, S., Homeister, L., Bloos, F., Scherag, A., Ammon, D., Mueller, S., Palm, J., Simon, P., Jahn, N., Loeffler, M., Wendt, T.,

Schuerholz, T., Groeber, P., and Schuppert, A., "Algorithmic surveillance of ICU patients with acute respiratory distress syndrome (ASIC) : protocol for a multicentre stepped-wedge cluster randomised quality improvement strategy", *BMJ open*, vol. 11, iss. 4, pp. 1-7, 2021

## **Algorithmic surveillance of ICU patients with acute respiratory distress syndrome (ASIC) : protocol for a multicentre stepped-wedge cluster randomised quality improvement strategy**

### **Bibtex entry :**

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@article { MBF+21,  
  author = { Marx, Gernot and Bickenbach, Johannes and Fritsch,  
Sebastian  
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Deffge, Saskia and Kistermann, Jennifer and Haferkamp, Silke  
Dorothee and Lutz, Irina and Voellm, Nora Kristiana and  
Lowitsch, Volker and Polzin, Richard and Sharafutdinov,  
Konstantin and Mayer, Hannah and Kuepfer, Lars and Burghaus,  
Rolf and Schmitt, Walter and Lippert, Joerg and Riedel,  
Morris and Barakat, Chadi and Stollenwerk, André and Fonck,  
Simon and Putensen, Christian and Zenker, Sven and  
Erdfelder, Felix and Grigutsch, Daniel and Kram, Rainer and  
Beyer, Susanne and Kampe, Knut and Gewehr, Jan Erik and  
Salman, Friederike and Juers, Patrick and Kluge, Stefan and  
Tiller, Daniel and Wisotzki, Emilia and Gross, Sebastian and  
Homeister, Lorenz and Bloos, Frank and Scherag, André and  
Ammon, Danny and Mueller, Susanne and Palm, Julia and Simon,  
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Thomas and Schuerholz, Tobias and Groeber, Petra and  
Schuppert, Andreas },  
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[PSS+21]

[PDFBIB](#)

Preuss, R., Smieschek, M., Stollenwerk, A., Kowalewski, S., and Heinrichs, T.,  
"Behälterreinigungsmaschine", 2021.

## Behälterreinigungsmaschine

### Bibtex entry :

```
@techreport { PSS+21,  
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[BBF+20]

[PDFBIB](#)

Buglowski, M., Bleilevens, C., Fabry, G., Kowalewski, S., and Stollenwerk, A., "Flussgesteuerte  
pH-Regulierung in einem automatisierten Nierenperfusionssystem", *Proceedings on automation  
in medical engineering*, vol. 1, iss. 1, 2020

## Flussgesteuerte pH-Regulierung in einem automatisierten Nierenperfusionssystem

### Bibtex entry :

```
@article { BBF+20,  
  author = { Buglowski, Mateusz and Bleilevens, Christian and Fabry,  
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(Germany),
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url = { https://doi.org/10.18416/AUTOMED.2020 },
illkey = { BMBF-031L0134B - Alternativmethoden - Verbund: AutoMock
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  Entwicklung eines vollautomatisierten in vitro Teststands
  (Mock Loop) - Ein künstlicher Kreislauf als
  Ersatzmethode zur Biokompatibilitätstestung von
  Membranoxygenatoren und zur Transplantationssimulation
  (BMBF-031L0134B) },
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```

[KGE+20]

[PDFBIB](#)

König, G., Grochowski, M., Eckert, M., Jakobczak, F., Stollenwerk, J., Kowalewski, S., and Loosen, P., "Apparat zur automatisierten Justage optischer Systeme", *DGaO-Proceedings*, vol. 2020, 2020

## Apparat zur automatisierten Justage optischer Systeme

### Bibtex entry :

```
@article { KGE+20,
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Marvin
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  year = { 2020 },
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  issn = { 1614-8436 },
  organization = { 121. Jahrestagung der deutschen Gesellschaft
für
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}
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[SRT+20]

[PDFBIB](#)

Smieschek, M., Rakel, S., Thönnessen, D., Derks, A., Stollenwerk, A., and Kowalewski, S., "A Remote Test Environment for a Large-Scale Microcontroller Laboratory Course", in *Proc. Cyber physical systems : model-based design : 9th international workshop, CyPhy 2019 and 15th international workshop, WESE 2019, New York City, NY, USA, October 17-18, 2019 : revised selected papers / Roger Chamberlain, Martin Edin Grimheden, Walid Taha (eds.)*, Cham, 2020 in *Lecture Notes in Computer Science*, Springer, pp. 231-246.

## A Remote Test Environment for a Large-Scale Microcontroller Laboratory Course

### Bibtex entry :

```
@inproceedings { SRT+20,  
  author = { Smieschek, Manfred and Rakel, Stefan and Th{"o}nnessen,  
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    2019 : revised selected papers / Roger Chamberlain, Martin  
    Edin Grimheden, Walid Taha (eds.) },  
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  pages = { 231-246 },  
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Final.pdf },  
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```

[SS20]

[PDFBIB](#)

Stollenwerk, A. and Smieschek, M., "Eingabe und Übertragung von Instandhaltungsinformationen für das Condition Monitoring - Digitalisierung von Offline-Informationen", , Düsseldorf / Berlin, VDI/VDE 3711, 2020.



# Eingabe und Übertragung von Instandhaltungsinformationen für das Condition Monitoring - Digitalisierung von Offline-Informationen

## Bibtex entry :

```
@techreport { SS20,
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Instandhaltungsinformationen
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https://www.vdi.de/richtlinien/details/vdivde-3711-eingabe-und-uebertra
gung-von-instandhaltungsinformationen-fuer-das-condition-monitoring-
digitalisierung-von-offline-informationen },
  illkey = { BMWi-03TNF001B - Industrie-4.0-Testbeds - Umsetzung von
  Demonstratoren in realen Umgebungen und Evaluation mit Fokus
  auf Standardisierung (I40Demo); Teilvorhaben: 'Use Case 2:
  Plug&Produce - Feldger{\\"a}tetausch im Betrieb' und 'Use
  Case 4: Predictive Maintenance' (BMWi-03TNF001B) },
}
```

[Sto20]

[PDFBIB](#)

Stollenwerk, A., "An Embedded Graduate Lab Course with Spirit", in *Proc. Cyber Physical Systems. Model-Based Design : 9th International Workshop, CyPhy 2019, and 15th International Workshop, WESE 2019, New York City, NY, USA, October 17-18, 2019, Revised Selected Papers / edited by Roger Chamberlain, Martin Edin Grimheden, Walid Taha.*, Cham, 2020 in *Lecture Notes in Computer Science*, Springer International Publishing ; Cham : Imprint: Springer, pp. 247-263.

## An Embedded Graduate Lab Course with Spirit

### Bibtex entry :

```
@inproceedings { Sto20,
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International Workshop, CyPhy 2019, and 15th International
Workshop, WESE 2019, New York City, NY, USA, October 17-18,
2019, Revised Selected Papers / edited by Roger Chamberlain,
Martin Edin Grimheden, Walid Taha. },
publisher = { Springer International Publishing ; Cham : Imprint:
Springer },
pages = { 247-263 },
series = { Lecture Notes in Computer Science },
year = { 2020 },
address = { Cham },
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Systems
Education, New York (USA), 2019-10-17 - 2019-10-18 },
doi = { 10.1007/978-3-030-41131-2_12 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-2020-02343 },
cin = { 122810 / 120000 },
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http://publications.rwth-aachen.de/record/783168/files/783168.pdf },
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[FDG+19]

[PDFBIB](#)

Fabry, G., Doorschodt, B. M., Grzanna, T., Boor, P., Elliott, A. R., Stollenwerk, A., Tolba, R. H., Rossaint, R., and Bleilevens, C., "Cold Preflush of Porcine Kidney Grafts Prior to Normothermic Machine Perfusion Aggravates Ischemia Reperfusion Injury", *Scientific reports*, vol. 9, p. 9, 2019

## Cold Preflush of Porcine Kidney Grafts Prior to Normothermic Machine Perfusion Aggravates Ischemia Reperfusion Injury

### Bibtex entry :

```
@article { FDG+19,
author = { Fabry, Gregor and Doorschodt, Benedict M. and Grzanna,
Tim
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André and Tolba, René H. and Rossaint, Rolf and
Bleilevens, Christian },
title = { Cold Preflush of Porcine Kidney Grafts Prior to
Normothermic
Machine Perfusion Aggravates Ischemia Reperfusion Injury },
journal = { Scientific reports },
publisher = { Macmillan Publishers Limited, part of Springer Nature
},
pages = { 9 Seiten },
volume = { 9 },
year = { 2019 },
address = { [London] },
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issn = { 2045-2322 },
doi = { 10.18154/RWTH-2019-08778 },
typ = { PUB:(DE-HGF)16 },
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cin = { 122810 / 120000531020-3533000-3533000-2533540-2 / 9770208 /
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url = {
http://publications.rwth-aachen.de/record/767376/files/767376.pdf },
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Entwicklung eines vollautomatisierten in vitro Teststands
(Mock Loop) - Ein kunstlicher Kreislauf als
Ersatzmethode zur Biokompatibilit tstestung von
Membranoxygenatoren und zur Transplantationssimulation
(BMBF-031L0134B) },
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[KBS+19]

[PDFBIB](#)

K hn, J., Buglowski, M., Stollenwerk, A., Kowalewski, S., Walter, M., Leonhardt, S., Petran, J., Kopp, R., Rossaint, R., and Janisch, T., "Fault Identification in a Blood Pump Using Neural Networks", in *Proc. World Congress on Medical Physics and Biomedical Engineering 2018 : June 3-8, 2018, Prague, Czech Republic (Vol.2) / edited by Lenka Lhotska, Lucie Sukupova, Igor Lackovi c, Geoffrey S. Ibbott*, Singapore, 2019 in IFMBE Proceedings, Springer Singapore, pp. 27-32.

## Fault Identification in a Blood Pump Using Neural Networks

### Bibtex entry :

```

@inproceedings { KBS+19,
  author = { K hn, Jan and Buglowski, Mateusz and Stollenwerk,
Andr 
and Kowalewski, Stefan and Walter, Marian and Leonhardt,
Steffen and Petran, Jan and Kopp, R dger and Rossaint,
Rolf and Janisch, Thorsten },
  title = { Fault Identification in a Blood Pump Using Neural
Networks },
  booktitle = { World Congress on Medical Physics and Biomedical
Engineering
2018 : June 3-8, 2018, Prague, Czech Republic (Vol.2) /
edited by Lenka Lhotska, Lucie Sukupova, Igor Lackovi c,
Geoffrey S. Ibbott },
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Biomedical
  Engineering, Prague (Czech Republic), 2018-06-03 -
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doi = { 10.1007/978-981-10-9038-7_6 },
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  Entwicklung eines vollautomatisierten in vitro Teststands
  (Mock Loop) - Ein kunstlicher Kreislauf als
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}
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[PAS+19]

[PDFBIB](#)

Pomprapa, A., Ahmed, W., Stollenwerk, A., Kowalewski, S., and Leonhardt, S., "Deep Learning of Arrhythmia Analysis Based on Convolutional Neural Network", *International journal of bioelectromagnetism : IJBEM*, vol. 21, iss. 1, pp. 48-58, 2019

## Deep Learning of Arrhythmia Analysis Based on Convolutional Neural Network

### Bibtex entry :

```
@article { PAS+19,
  author = { Pomprapa, Anake and Ahmed, Waqar and Stollenwerk, André
and
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  title = { Deep Learning of Arrhythmia Analysis Based on
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  pages = { 48-58 },
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[SKS+19]

## PDFBIB

Smieschek, M., Kobsik, G., Stollenwerk, A., Kowalewski, S., Orlikowsky, T., and Schoberer, M., "Aided Hand Detection in Thermal Imaging Using RGB Stereo Vision", in *Proc. Biomedical engineering ranging from wellness to intensive care : 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) : 41st EMB Conference : July 23-27, Berlin / IEEE, EMB ; conference editorial board chair: Riccardo Barbieri, Milan, Italy, Piscataway, NJ, 2019, IEEE, pp. 6314-6317.*

## Aided Hand Detection in Thermal Imaging Using RGB Stereo Vision

### Bibtex entry :

```
@inproceedings { SKS+19,
  author = { Smieschek, Manfred and Kobsik, Gregor and Stollenwerk,
    André and Kowalewski, Stefan and Orlikowsky, Thorsten and
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    care : 2019 41st Annual International Conference of the IEEE
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    - 2019-07-27 },
  doi = { 10.1109/EMBC.2019.8856990 },
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  url = { http://publications.rwth-aachen.de/record/770752 },
}
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[KSK+18]

## PDFBIB

Kühn, J., Stollenwerk, A., Kowalewski, S., Fabry, G., Grzanna, T., Doorschodt, B., Tolba, R. H., Rossaint, R., and Bleilevens, C., "A long-term setup for kidney perfusion." 2018.

## A long-term setup for kidney perfusion

### Bibtex entry :

```
@inproceedings { KSK+18,
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```
author = { K{"u}hn, Jan and Stollenwerk, André and Kowalewski,
Stefan
and Fabry, Gregor and Grzanna, Tim and Doorschodt, Benedict
and Tolba, René H. and Rossaint, Rolf and Bleilevens,
Christian },
title = { A long-term setup for kidney perfusion },
year = { 2018 },
organization = { 52nd Annual Conference of the German Society for
Biomedical
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typ = { PUB:(DE-HGF)6 },
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-
Entwicklung eines vollautomatisierten in vitro Teststands
(Mock Loop) - Ein k{"u}nstlicher Kreislauf als
Ersatzmethode zur Biokompatibilit{"a}tstestung von
Membranoxygenatoren und zur Transplantationssimulation
(BMBF-031L0134B) },
}
```

[PAS+18]

[PDFBIB](#)

Pomprapa, A., Ahmed, W., Stollenwerk, A., Kowalewski, S., Uguz, D. U., and Leonhardt, S., "Arrhythmia Analysis in a Non-contact cECG Chair using Convolutional Neural Network", in *Proc. Proceedings of the 11th International Conference on Bioelectromagnetism : 23-25 May 2018, Aachen, Germany / Organizing Committee for ICBEM 2018 in Aachen: Prof. Steffen Leonhardt, RWTH Aachen University, Germany, Prof. Jaakko Malmivuo, Technische Universität Berlin, Germany, Dr. Marian Walter, RWTH Aachen University, Germany, Benjamin Hentze, RWTH Aachen University, Germany Markus Lüken, RWTH Aachen University, Germany ; Scientific Committee for ICBEM 2018 in Aachen: Prof. Catherine Disselhorst-Klug, RWTH Aachen University, Germany [und 27 weitere], Aachen, 2018, p. 4.*

## Arrhythmia Analysis in a Non-contact cECG Chair using Convolutional Neural Network

### Bibtex entry :

```
@inproceedings { PAS+18,
author = { Pomprapa, Anake and Ahmed, Waqar and Stollenwerk, André
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title = { Arrhythmia Analysis in a Non-contact cECG Chair using
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Organizing Committee for ICBEM 2018 in Aachen: Prof. Steffen
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Leonhardt, RWTH Aachen University, Germany, Prof. Jaakko
Malmivuo, Technische Universit{"a}t Berlin, Germany, Dr.
Marian Walter, RWTH Aachen University, Germany, Benjamin
Hentze, RWTH Aachen University, Germany Markus L{"u}ken,
RWTH Aachen University, Germany ; Scientific Committee for
ICBEM 2018 in Aachen: Prof. Catherine Disselhorst-Klug, RWTH
Aachen University, Germany [und 27 weitere] },
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(Germany), 2018-05-23 - 2018-05-25 },
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http://publications.rwth-aachen.de/record/723536/files/723536.pdf },
}

```

[PAS+18a]

[PDFBIB](#)

Pomprapa, A., Ahmed, W., Sayani, M. S., Stollenwerk, A., Kowalewski, S., and Leonhardt, S., "Classification of Obstructive Sleep Apnea Using Machine Learning", *American journal of respiratory and critical care medicine*, vol. 197, iss. Abstract Issue, p. 1, 2018

## Classification of Obstructive Sleep Apnea Using Machine Learning

### Bibtex entry :

```

@article { PAS+18a,
  author = { Pomprapa, Anake and Ahmed, W. and Sayani, M. S. and
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medicine },
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San Diego, CA (USA), 2018-05-18 - 2018-05-23 },
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https://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2018.197.1\_MeetingAbstracts.A7449 },
}
```

[PAS+18b]

[PDFBIB](#)

Pomprapa, A., Ahmed, W., Stollenwerk, A., Kowalewski, S., Uguz, D. U., and Leonhardt, S., "Arrhythmia Analysis in a Non-contact cECG Chair using Convolutional Neural Network", *International journal of bioelectromagnetism : IJBEM*, vol. 20, iss. 1, pp. 47-50, 2018

## Arrhythmia Analysis in a Non-contact cECG Chair using Convolutional Neural Network

### Bibtex entry :

```
@article { PAS+18b,
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```

[PSA+18]

[PDFBIB](#)

Pomprapa, A., Sayani, M. S., Anwar, T., Stollenwerk, A., Kowalewski, S., von Platen, P. H., and Leonhardt, S., "Apnea Detection in a Contactless Multisensor System using Deep Learning Algorithm", in *Proc. [13th Russian-German Conference on Biomedical Engineering (RGC), RGC, 2018-05-23 - 2018-05-25, Aachen, Germany]*, 2018.



# Apnea Detection in a Contactless Multisensor System using Deep Learning Algorithm

## Bibtex entry :

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@inproceedings { PSA+18,
  author = { Pomprapa, Anake and Sayani, Mohammad Salman and Anwar, Toni
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  title = { Apnea Detection in a Contactless Multisensor System using Deep Learning Algorithm },
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http://publications.rwth-aachen.de/record/723540/files/723540.pdf },
}
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[SBK18]

[PDFBIB](#)

Stollenwerk, A., Buglowski, M., and Kühn, J., "Mock loop for bubble generation in a centrifugal blood pump for fault simulation", *Current Directions in Biomedical Engineering*, vol. 4, iss. 1, pp. 33-36, 2018

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## Bibtex entry :

```
@article { SBK18,
  author = { Stollenwerk, André and Bugłowski, Mateusz and K{"u}hn, Jan },
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http://publications.rwth-aachen.de/record/752262/files/752262.pdf },
}
```

[SHS+18]

PDFBIB

Smieschek, M., Hinrichs, T., Stollenwerk, A., Kowalewski, S., and Preuß, R., "A New Condition Indicator for Slow-Rotating Roller Chains based on the Angle and Torque of the Driving Motor", in *Proc. 2018 IEEE 14th International Conference on Automation Science and Engineering (CASE) : 20-24 Aug. 2018 / general chair: Birgit Vogel-Heuser (Technical University of Munich)* ; publisher: IEEE, Piscataway, NJ, 2018, IEEE, pp. 642-644.

## A New Condition Indicator for Slow-Rotating Roller Chains based on the Angle and Torque of the Driving Motor

### Bibtex entry :

```
@inproceedings { SHS+18,
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Plug&Produce - Feldger{"a}tetausch im Betrieb' und 'Use
Case 4: Predictive Maintenance' },
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[WSA+18]

PDFBIB

Winter, A., Stäubert, S., Ammon, D., Aiche, S., Beyan, O. D., Bischoff, V., Daumke, P., Decker, S. J., Funkat, G., Gewehr, J. E., de Greiff, A., Haferkamp, S. D., Hahn, U., Henkel, A., Kirsten, T., Klöss, T., Lippert, J., Löbe, M., Lowitsch, V., Maassen, O., Maschmann, J., Meister, S., Mikolajczyk, R., Nüchter, M., Pletz, M. W., Rahm, E., Riedel, M., Saleh, K., Schuppert, A., Smers, S., Stollenwerk, A., Uhlig, S., Wendt, T., Zenker, S., Fleig, W., Marx, G., Scherag, A., and Löffler, M., "Smart Medical Information Technology for Healthcare (SMITH) : Data Integration based on Interoperability Standards", *Methods of information in medicine*, vol. 57, iss. S 01, p. e92-e105, 2018

## Smart Medical Information Technology for Healthcare (SMITH) : Data Integration based on Interoperability Standards

### Bibtex entry :

```
@article { WSA+18,
  author = { Winter, Alfred and St{"a}ubert, Sebastian and Ammon,
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[BHK+17]

[PDFBIB](#)

Brendle, C., Hackmack, K. -F., Kühn, J., Wardeh, M. N., Janisch, T., Kopp, R., Rossaint, R., Stollenwerk, A., Kowalewski, S., Leonhardt, S., Walter, M., and Misgeld, B. J. E., "Closed-loop control of extracorporeal oxygen and carbon dioxide gas transfer", *Control engineering practice*, vol. 59, pp. 173-182, 2017

## Closed-loop control of extracorporeal oxygen and carbon dioxide gas transfer

### Bibtex entry :

```
@article { BHK+17,
  author = { Brendle, Christian and Hackmack, K.-F. and Kühn, Jan
and
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}
```

[BMK+17]

[PDFBIB](#)

Brendle, C., Mülders, T., Kühn, J., Janisch, T., Kopp, R., Rossaint, R., Stollenwerk, A., Kowalewski, S., Misgeld, B. J. E., Leonhardt, S., and Walter, M., "Physiological closed-loop control of mechanical ventilation and extracorporeal membrane oxygenation", *Biomedizinische Technik*,

vol. 62, iss. 2, pp. 199-212, 2017

## Physiological closed-loop control of mechanical ventilation and extracorporeal membrane oxygenation

### Bibtex entry :

```
@article { BMK+17,
  author = { Brendle, Christian and M{"u}lders, Thorsten and
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Rolf and Stollenwerk, André and Kowalewski, Stefan and
Misgeld, Berno Johannes Engelbert and Leonhardt, Steffen and
Walter, Marian },
  title = { Physiological closed-loop control of mechanical
ventilation
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  journal = { Biomedizinische Technik },
  publisher = { de Gruyter },
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  volume = { 62 },
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  cin = { 611010 / 122810533000-2 / 120000 },
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}
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[KBS+17]

[PDFBIB](#)

Kühn, J., Brendle, C., Stollenwerk, A., Schweigler, M., Kowalewski, S., Janisch, T., Rossaint, R., Leonhardt, S., Walter, M., and Kopp, R., "Decentralized safety concept for closed-loop controlled intensive care : Supervision of a blood pump during extracorporeal circulation", *Biomedizinische Technik*, vol. 62, iss. 2, pp. 213-224, 2017

## Decentralized safety concept for closed-loop controlled intensive care : Supervision of a blood pump during extracorporeal circulation

### Bibtex entry :

```
@article { KBS+17,
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Thorsten and Rossaint, Rolf and Leonhardt, Steffen and
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url = { http://publications.rwth-aachen.de/record/707857 },
}
```

[SKS+17]

[PDFBIB](#)

Stollenwerk, A., Kopp, R., Sehl, F., and Janisch, T., "Tauchcomputerunterstützung durch vernetzte Smart Wearables", *Caisson : Mitteilungen der GTÜM e.V.*, vol. 32, iss. 4, 2017

## Tauchcomputerunterstützung durch vernetzte Smart Wearables

### Bibtex entry :

```
@article { SKS+17,
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[SSK+17]

## PDFBIB

Smieschek, M., Stollenwerk, A., Kowalewski, S., Orlikowsky, T., and Schoberer, M., "Unterstützte Handerkennung in Thermographiebildern zur Validierung der hygienischen Händedesinfektion", in *Proc. Bildverarbeitung für die Medizin 2017 : Algorithmen - Systeme - Anwendungen. Proceedings des Workshops vom 12. bis 14. März 2017 in Heidelberg / herausgegeben von Klaus Hermann Maier-Hein, geb. Fritzsche, Thomas Martin Deserno, geb. Lehmann, Heinz Handels, Thomas Tolxdorff*, Berlin, Heidelberg, 2017 in *Informatik aktuell*, Springer Berlin Heidelberg, pp. 147-152.

## Unterstützte Handerkennung in Thermographiebildern zur Validierung der hygienischen Händedesinfektion

### Bibtex entry :

```
@inproceedings { SSK+17,
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  14. M{"a}rz 2017 in Heidelberg / herausgegeben von Klaus
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```

[SSM+17]

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Stollenwerk, A., Sehl, F., Marx, G., Kowalewski, S., and Janisch, T., "Enrichment of a diving computer with body sensor network data", in *Proc. 2017 IEEE 14th International Conference on Wearable and Implantable Body Sensor Networks (BSN) : 9-12 May 2017 / sponsors: IEEE, EMB*, Piscataway, NJ, 2017, IEEE, pp. 169-172.

## Enrichment of a diving computer with body sensor network data

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@inproceedings { SSM+17,  
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[BHK+16]

[PDFBIB](#)

Brendle, C., Hackmack, K. -F., Kühn, J., Wardeh, M. N., Janisch, T., Kopp, R., Rossaint, R., Stollenwerk, A., Kowalewski, S., Misgeld, B. J. E., Leonhardt, S., and Walter, M., "Continuous gas transfer monitoring during extracorporeal membrane oxygenation", *Biomedical signal processing and control*, vol. 31, pp. 321-330, 2016

## Continuous gas transfer monitoring during extracorporeal membrane oxygenation

### Bibtex entry :

```
@article { BHK+16,  
  author = { Brendle, Christian and Hackmack, K.-F. and K{"u}hn, Jan  
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Stefan and Misgeld, Berno Johannes Engelbert and Leonhardt,  
Steffen and Walter, Marian },
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[KBS+16]

[PDFBIB](#)

Kopp, R., Bensberg, R., Stollenwerk, A., Arens, J., Grottke, O., Walter, M., and Rossaint, R., "Automatic Control of Veno-Venous Extracorporeal Lung Assist : Presented in part at the 13th Congress of DIVI held December 4-6, 2013 in Leipzig, Germany", *Artificial organs*, vol. 40, iss. 10, pp. 992-998, 2016

## Automatic Control of Veno-Venous Extracorporeal Lung Assist : Presented in part at the 13th Congress of DIVI held December 4-6, 2013 in Leipzig, Germany

### Bibtex entry :

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@article { KBS+16,
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[KSB+16]

[PDFBIB](#)

Kühn, J., Stollenwerk, A., Brendle, C., Janisch, T., Walter, M., Rossaint, R., Leonhardt, S., Kowalewski, S., and Kopp, R., "Sensor Supervision and Control Value Limitations in Networked Intensive Care", in *Proc. [Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE-WS 2016), Wien, 23.-26. Februar 2016 / Edited by: Wolf Zimmermann, Lukas Alperowitz, Bernd Brügge, Jörn Fahsel, Andrea Herrmann, Anne Hoffmann, Andreas Krall, Dieter Landes, Horst Lichter, Dirk Riehle, Ina Schaefer, Constantin Scheuermann, Alexander Schlaefer, Sibylle Schupp, Andreas Seitz, Andreas Steffens, André Stollenwerk, Rüdiger Weißbach]*, Aachen, Germany, 2016 in CEUR Workshop Proceedings, RWTH Aachen, pp. 187-194.

## Sensor Supervision and Control Value Limitations in Networked Intensive Care

### Bibtex entry :

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@inproceedings { KSB+16,  
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[KVS+16]

[PDFBIB](#)

Kühn, J., Vaitl, L., Stollenwerk, A., Brendle, C., Walter, M., Leonhardt, S., Kowalewski, S., Rossaint, R., Kopp, R., and Janisch, T., "Eingebettete Rezykulationsmessung für eine ECLA-Therapie", in *Proc. AUTOMED 2016 : Workshop : Wismar, 22.-23. September 2016 / DGBMT - Deutsche Gesellschaft für Biomedizinische Technik im VDE ; Editoren: Prof. Dr.-Ing. habil. Olaf Simanski, Dr. Olaf Hagendorf, Jörg Zucknik*, Wismar, 2016, Hochschule Wismar, Fakultät für Ingenieurwissenschaften, Fachgebiet Automatisierungstechnik/Mechatronik, p. 2.

## Eingebettete Rezykulationsmessung für eine ECLA-Therapie

### Bibtex entry :

```
@inproceedings { KVS+16,
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[SSJ+16]

[PDFBIB](#)

Smieschek, M., Stollenwerk, A., Jüptner, J. P., Kowalewski, S., Orlikowsky, T., and Schoberer, M., "Evaluating Hand Disinfection with Alcohol-Based Hand Sanitizers Using Thermal Imaging", in *Proc. [Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE-WS 2016), Wien, 23.-26. Februar 2016 / Edited by: Wolf Zimmermann, Lukas Alperowitz, Bernd Brügge, Jörn Fahsel, Andrea Herrmann, Anne Hoffmann, Andreas Krall, Dieter Landes, Horst Lichter, Dirk Riehle, Ina Schaefer, Constantin Scheuermann, Alexander Schlaefer, Sibylle Schupp, Andreas Seitz, Andreas Steffens, André Stollenwerk, Rüdiger Weißbach]*, Aachen, Germany, 2016 in CEUR Workshop Proceedings, RWTH Aachen, pp. 174-181.

## Evaluating Hand Disinfection with Alcohol-Based Hand Sanitizers Using Thermal Imaging

**Bibtex entry :**

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@inproceedings { SSJ+16,  
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[SSS16]

[PDFBIB](#)

Schlaefer, A., Schupp, S., and Stollenwerk, A., "FS-MCPS: 2nd Workshop on Fail Safety in Medical Cyber-Physical Systems", in *Proc. Software Engineering 2016 : 23. - 26. Februar 2016, Wien*,

Österreich / Jens Knoop ; Uwe Zdun (Hrsg.), Bonn, 2016 in GI-Edition : lecture notes in informatics, Gesellschaft für Informatik, pp. 127-128.

## FS-MCPS: 2nd Workshop on Fail Safety in Medical Cyber-Physical Systems

### Bibtex entry :

```
@inproceedings { SSS16,
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[SSS16a]

[PDFBIB](#)

Schlaefer, A., Schupp, S., and Stollenwerk, A., "2nd Workshop on Fail Safety in Medical Cyber-Physical Systems (FS-MCPS)", in *Proc. Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE-WS 2016), Wien, 23.-26. Februar 2016 / Edited by: Wolf Zimmermann, Lukas Alperowitz, Bernd Brügge, Jörn Fahsel, Andrea Herrmann, Anne Hoffmann, Andreas Krall, Dieter Landes, Horst Lichter, Dirk Riehle, Ina Schaefer, Constantin Scheuermann, Alexander Schlaefer, Sibylle Schupp, Andreas Seitz, Andreas Steffens, André Stollenwerk, Rüdiger Weißbach*, Aachen, Germany, 2016 in CEUR Workshop Proceedings, RWTH Aachen, pp. 172-173.

## 2nd Workshop on Fail Safety in Medical Cyber-Physical Systems (FS-MCPS)

### Bibtex entry :

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@inproceedings { SSS16a,
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[WBK+16]

[PDFBIB](#)

Walter, M., Brendle, C., Kühn, J., Janisch, T., Kopp, R., Stollenwerk, A., and Leonhardt, S., "Assistive Control of Extracorporeal Oxygenation Systems", in *Proc. Proceedings of the 12th Russian-German Conference on Biomedical Engineering : 04-07 Jul 2016, Suzdal, Russia*, Suzdal, 2016, Vladimir state univ. named after Alexandr and Nikolay Stoletovs, pp. 222-226.

## Assistive Control of Extracorporeal Oxygenation Systems

### Bibtex entry :

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@inproceedings { WBK+16,  
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[ZAB+16]

[PDFBIB](#)

Zimmermann, W., Alperowitz, L., Brügge, B., Fahsel, J., Herrmann, A., Hoffmann, A., Krall, A., Landes, D., Lichter, H., Riehle, D., Schaefer, I., Scheuermann, C., Schlaefer, A., Schupp, S., Seitz, A., Steffens, A., Stollenwerk, A., and Weißbach, R., Eds., *Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE-WS 2016)*, Wien, 23.-26. Februar 2016, Aachen, Germany: RWTH Aachen, 2016.

## **Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE-WS 2016), Wien, 23.-26. Februar 2016**

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[BHK+15]

[PDFBIB](#)

Brendle, C., Hackmack, K., Kühn, J., Wardeh, M. N., Kopp, R., Rossaint, R., Stollenwerk, A., Kowalewski, S., Misgeld, B. J. E., Leonhardt, S., and Walter, M., "In silico evaluation of gas transfer estimation during extracorporeal membrane oxygenation", *IFAC-PapersOnLine*, vol. 48, iss. 20, pp. 499-504, 2015

## In silico evaluation of gas transfer estimation during extracorporeal membrane oxygenation

### Bibtex entry :

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[dMK+15]

[PDFBIB](#)

de Brouwer, P., Mager, I., Kopp, R., Walter, M., Stollenwerk, A., Schmitz-Rode, T., Steinseifer, U., and Arens, J., "Dynamische Studie zum Einfluss von negativem Druck auf Hämolyse",



*Kardiotechnik*, vol. 24, iss. 1, pp. 3-6, 2015

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### Bibtex entry :

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@article { dMK+15,
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[KSB+15]

[PDFBIB](#)

Kühn, J., Stollenwerk, A., Brendle, C., Walter, M., Wardeh, M. N., Kopp, R., and Kowalewski, S., "Embedded Safety Measures for Extracorporeal Blood Circulation", in *Proc. [Proceedings of the 11th German-Russian-Conference on Biomedical Engineering, GRC, 17.06.2015-19.06.2015, Aachen, Germany]*, 2015, pp. 169-170.

## Embedded Safety Measures for Extracorporeal Blood Circulation

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@inproceedings { KSB+15,
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[KSK+15]

[PDFBIB](#)

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### Bibtex entry :

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@article { KSK+15,
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[KSS+15]

[PDFBIB](#)

Kühn, J., Schoonbrood, P., Stollenwerk, A., Brendle, C., Wardeh, M. N., Walter, M., Roissant, R.,

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}
```

[KWS+15]

[PDFBIB](#)

Kühn, J., Wübbels, N., Stollenwerk, A., Kowalewski, S., Brendle, C., Walter, M., Leonhardt, S., Wardeh, M., Kopp, R., and Roissant, R., "Pulsatile Ansteuerung einer Diagonalblutpumpe", in *Proc. Automation 2015 : benefits of change - the future of automation ; 16. Branchentreff der Mess- und Automatisierungstechnik ; Kongresshaus Baden-Baden, 11. und 12. Juni 2015 / VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik . - Bd. 1*, Düsseldorf, 2015 in VDI-Berichte, VDI Verlag, pp. 325-339.

# Pulsatile Ansteuerung einer Diagonalblutpumpe

## Bibtex entry :

```
@inproceedings { KWS+15,  
  author = { K{"u}hn, Jan and W{"u}bbels, Nico and Stollenwerk,  
  André  
    and Kowalewski, Stefan and Brendle, Christian and Walter,  
    Marian and Leonhardt, Steffen and Wardeh, Markus and Kopp,  
    R{"u}dger and Roissant, Rolf },  
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}
```

[SKW+15]

[PDFBIB](#)

Stollenwerk, A., Kühn, J., Walter, M., Brendle, C., Wardeh, M. N., Rossaint, R., Leonhardt, S., Kowalewski, S., and Kopp, R., "Software-based Prediction of Cannula Occlusion during Extracorporeal Blood Circulation through Networked Medical Data", in *Proc. SE-WS 2015, software engineering workshops 2015 : gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2015, Dresden, 17. - 18. März 2015 / hrsg. von Wolg Zimmermann ...*, Aachen, Germany, 2015 in CEUR workshop proceedings, RWTH Aachen, pp. 1-6.

## Software-based Prediction of Cannula Occlusion during Extracorporeal Blood Circulation through Networked Medical Data

**Bibtex entry :**

```
@inproceedings { SKW+15,
  author = { Stollenwerk, André and K{"u}hn, Jan and Walter, Marian
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}
```

[SLR+15]

[PDFBIB](#)

Stollenwerk, A., Leonhardt, S., Rossaint, R., and Kowalewski, S., "Advancing Intensive Care by Networked Medical Systems", in *Proc. [Proceedings of the 11th German-Russian-Conference on Biomedical Engineering, GRC, 17.06.2015-19.06.2015, Aachen, Germany]*, 2015, pp. 211-213.

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```
@inproceedings { SLR+15,
  author = { Stollenwerk, André and Leonhardt, Steffen and Rossaint,
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  Biomedical Engineering, GRC, 17.06.2015-19.06.2015, Aachen,
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pages = { 211-213 },
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[SKB+14]

[PDFBIB](#)

Stollenwerk, A., Kühn, J., Brendle, C., Walter, M., Arens, J., Wardeh, M. N., Kowalewski, S., and Kopp, R., "Model-based supervision of a blood pump", in *Proc. Proceedings of the 19th World Congress of the International Federation of Automatic Control, Cape Town, South Africa, 2014, 24-29 August 2014 : Promoting automatic control for the benefit of humankind*, Laxenburg, 2014 in IFAC-PapersOnLine, IFAC, pp. 6593-6598.

## Model-based supervision of a blood pump

### Bibtex entry :

```
@inproceedings { SKB+14,
author = { Stollenwerk, André and Kühn, Jan and Brendle,
Christian
and Walter, Marian and Arens, Jutta and Wardeh, Markus Nabil
and Kowalewski, Stefan and Kopp, Rüdiger },
title = { Model-based supervision of a blood pump },
booktitle = { Proceedings of the 19th World Congress of the
International
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2014, 24-29 August 2014 : Promoting automatic control for
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des Lungenversagens (ECLA-VENT) (DFG-PAK-138/2) },
}
```

[PMS+13]

[PDFBIB](#)

Pomprapa, A., Misgeld, B., Sorgato, V., Stollenwerk, A., Walter, M., and Leonhardt, S., "Robust Control of End-Tidal CO<sub>2</sub> using the H<sub>∞</sub> Loop-Shaping Approach", *Acta polytechnica = Journal of advanced engineering*, vol. 53, pp. 895-900, 2013

## Robust Control of End-Tidal CO<sub>2</sub> using the H<sub>∞</sub> Loop-Shaping Approach

**Bibtex entry :**

```
@article { PMS+13,
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  url = {
http://publications.rwth-aachen.de/record/231825/files/231825.pdf },
}
```

[Sto13]

[PDFBIB](#)

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**Bibtex entry :**

```
@phdthesis { Sto13,
  author = { Stollenwerk, André },
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pages = { XX, 183 S. : Ill., graph. Darst. },
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[WBS+13]

[PDFBIB](#)

Walter, M., Brendle, C., Stollenwerk, A., Kopp, R., Arens, J., Bensberg, R., and Leonhardt, S., "Patient oriented closed loop control of extracorporeal lung assist", in *Proc. Journal of critical care*, New York, NY, 2013, vol. 28, Elsevier, p. e8-e9.

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### Bibtex entry :

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@inproceedings { WBS+13,
  author = { Walter, Marian and Brendle, Christian and Stollenwerk,
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[WSB+13]

[PDFBIB](#)

Walter, M., Stollenwerk, A., Bensberg, R., Kopp, R., and Leonhardt, S., "Smart ECLA—closed loop control of O<sub>2</sub> and CO<sub>2</sub> for management of extracorporeal lung assist", *Journal of critical care*, vol. 28, p. e41-e42, 2013



## Smart ECLA—closed loop control of O2 and CO2 for management of extracorporeal lung assist

### Bibtex entry :

```
@article { WSB+13,
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```

[KRS12]

[PDFBIB](#)

Kowalewski, S., Rumpe, B., and Stollenwerk, A., "Cyber-Physical Systems - eine Herausforderung an die Automatisierungstechnik?", in *Proc. Automation 2012 : der 13. Branchentreff der Mess- und Automatisierungstechnik / VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik ; Kongress 'Automation 2012' ; 13 (Baden-Baden) ; 2011.06.13-14 Branchentreff der Mess- und Automatisierungstechnik, Düsseldorf, 2012* in VDI-Berichte, VDI-Verl., pp. 113-116.

## Cyber-Physical Systems - eine Herausforderung an die Automatisierungstechnik?

### Bibtex entry :

```
@inproceedings { KRS12,
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[WBB+12]

[PDFBIB](#)

Walter, M., Brendle, C., Bensberg, R., Kopp, R., Arens, J., Stollenwerk, A., and Leonhardt, S., "Closed loop physiological ECMO control", in *Proc. 5th European Conference of the International Federation for Medical and Biological Engineering : 14 - 18 September 2011, Budapest, Hungary ; [EMBEC] / Ákos Jobbágy (ed.)*, [Berlin], 2012 in IFMBE Proceedings, Springer, pp. 319-322.

## Closed loop physiological ECMO control

### Bibtex entry :

```
@inproceedings { WBB+12,
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Kopp, R{"u"}dger and Arens, Jutta and Stollenwerk, André
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[WBS+12]

PDFBIB

Walter, M., Brendle, C., Stollenwerk, A., Kopp, R., Arens, J., Bensberg, R., and Leonhardt, S., "Patient oriented closed loop control of extracorporeal lung assist", in *Proc. 11th International Conference on Complexity in Acute Illness (ICCAI), Ottawa, Canada, September 6 - 9, 2012*, 2012, pp. 51-51.

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### Bibtex entry :

```
@inproceedings { WBS+12,
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http://www.scai-med.org/meetings/2012Iccai/2012iccaiprogram.pdf },
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[BBS+11]

PDFBIB

Beckschulze, E., Brauer, J., Stollenwerk, A., and Kowalewski, S., "Analyzing Embedded Systems Code for Mixed-Critical Systems Using Hybrid Memory Representations", in *Proc. 2011 14th IEEE International Symposium on Object/Component/Service-Oriented Real-Time Distributed Computing workshops (ISORCW) : 28 - 31 March 2011, Newport Beach, California, USA ; proceedings*, Piscataway, NJ, 2011, IEEE, pp. 33-40.

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### Bibtex entry :

```
@inproceedings { BBS+11,
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[BBS+11a]

[PDFBIB](#)

Brendle, C., Bensberg, R., Stollenwerk, A., Arens, J., and Walter, M., "Patient Orientated Automation of the Therapy with the Extracorporeal Membrane Oxygenation (ECMO)", in *Proc. 45. Jahrestagung der Deutschen Gesellschaft für Biomedizinische Technik*, 2011, DGBMT.

## Patient Orientated Automation of the Therapy with the Extracorporeal Membrane Oxygenation (ECMO)

### Bibtex entry :

```
@inproceedings { BBS+11a,
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    booktitle = { 45. Jahrestagung der Deutschen Gesellschaft f{"u}r
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    publisher = { DGBMT },
    year = { 2011 },
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f{"u}r
    Biomedizinische Technik },
    typ = { PUB:(DE-HGF)8 },
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}
```

}

[KBW+11]

[PDFBIB](#)

Kopp, R., Bensberg, R., Walter, M., Arens, J., Rossaint, R., and Stollenwerk, A., "Automation of extracorporeal membrane oxygenation using a combined safety and control concept", in *Proc. Intensive care medicine*, Berlin [u.a.], 2011, vol. 37, Springer, pp. 230-230.

## Automation of extracorporeal membrane oxygenation using a combined safety and control concept

### Bibtex entry :

```
@inproceedings { KBW+11,
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  booktitle = { Intensive care medicine },
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  url = { http://publications.rwth-aachen.de/record/156873 },
}
```

[KS11]

[PDFBIB](#)

Kowalewski, S. and Stollenwerk, A., "Supporting Evolving Requirements in CPS by Abstraction Layers in the Architecture", in *Proc. Workshop on Architectures for Cyber-Physical Systems*, Chicago, IL, USA, 2011.

## Supporting Evolving Requirements in CPS by Abstraction Layers in the Architecture

### Bibtex entry :

```
@conference { KS11,
  author = { Kowalewski, Stefan and Stollenwerk, André },
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[SGA+11]

[PDFBIB](#)

Stollenwerk, A., Gathmann, F., Arens, J., Bensberg, R., Walter, M., Kopp, R., and Kowalewski, S., "Safety Aware Pump-Control for a Rotary ECMO Blood Pump", in *Proc. The international journal of artificial organs*, Milano [u.a.], 2011, vol. 34, Wichtig, pp. 617-617.

## Safety Aware Pump-Control for a Rotary ECMO Blood Pump

### Bibtex entry :

```
@inproceedings { SGA+11,
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}
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[SGB+11]

[PDFBIB](#)

Stollenwerk, A., Gathmann, F., Bensberg, R., Walter, M., Arens, J., Kopp, R., and Kowalewski, S., "A model-based safety concept for a rotary blood pump", *Biomedizinische Technik = Biomedical engineering*, vol. 56, iss. S1, 2011

## A model-based safety concept for a rotary blood pump

**Bibtex entry :**

```
@article { SGB+11,
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[SGW+11]

[PDFBIB](#)

Stollenwerk, A., Göbe, F., Walter, M., Arens, J., Kopp, R., and Kowalewski, S., "Smart Data Provisioning for Model-Based Generated Code in an Intensive Care Application", in *Proc. 3rd Joint Workshop On High Confidence Medical Devices, Software, and Systems & Medical Device Plug-and-Play Interoperability : HCMDSS/MDPnP 2011 ; in conjunction with CPSweek 2011 ; April 11, 2011 Chicago, USA*, Chicago, 2011, HCMDSS/MDPnP 2011 ; in conjunction with CPSweek 2011 ; April 11, 2011 Chicago, USA, p. 8.

## Smart Data Provisioning for Model-Based Generated Code in an Intensive Care Application

**Bibtex entry :**

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@inproceedings { SGW+11,
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}
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[WBA+11]

[PDFBIB](#)

Walter, M., Brendle, C., Arens, J., Stollenwerk, A., Kopp, R., Bensberg, R., and Leonhardt, S., "Physiological target control in long term extracorporeal oxygenation", in *Proc. The international journal of artificial organs*, Milano [u.a.], 2011, vol. 34 in 2011, Wichtig, pp. 625-625.

## Physiological target control in long term extracorporeal oxygenation

### Bibtex entry :

```
@inproceedings { WBA+11,
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[AdM+10]

[PDFBIB](#)

Arens, J., de Brouwer, P., Mager, I., Kopp, R., Walter, M., Stollenwerk, A., Schmitz-Rode, T., and Steinseifer, U., "A dynamic study on the hemolytic effect of negative pressure on blood", in *Proc. ASAIO journal*, Hagerstown, Md., 2010, vol. 56, Lippincott, pp. 96-96.



## A dynamic study on the hemolytic effect of negative pressure on blood

### Bibtex entry :

```
@inproceedings { AdM+10,  
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```

[SDK10]

[PDFBIB](#)

Stollenwerk, A., Derks, A., and Kowalewski, S., "A Modular, Robust and Open Source Microcontroller Platform", in *Proc. Proceedings / 2010 Workshop on Embedded Systems Education : WESE 2010 ; Scottsdale, AZ, USA, October 28th, 2010 / Eds.: Peter Marwedel ...*, New York, NY, 2010, ACM, pp. 48-54.

## A Modular, Robust and Open Source Microcontroller Platform

### Bibtex entry :

```
@inproceedings { SDK10,  
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[SJA+10]

[PDFBIB](#)

Stollenwerk, A., Jörgens, J., Arens, J., Walter, M., Kopp, R., and Kowalewski, S., "Model Based Diagnosis for Extracorporeal Membrane Oxygenation", in *Proc. The international journal of artificial organs*, Milano [u.a.], 2010, vol. 33, Wichtig Ed., pp. 447-447.

## Model Based Diagnosis for Extracorporeal Membrane Oxygenation

### Bibtex entry :

```
@inproceedings { SJA+10,
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[SJW+10]

[PDFBIB](#)

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# Modellbasierte Fehlerdiagnose eines Membranoxygenators

## Bibtex entry :

```
@article { SJW+10,
  author = { Stollenwerk, André and J{"o}rgens, J{"o}rg and Walter,
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[SLW+10]

[PDFBIB](#)

Stollenwerk, A., Lang, M., Walter, M., Arens, J., Kopp, R., and Kowalewski, S., "Sicherheitskonzept für eine intensivmedizinische Anwendung am Beispiel der EMCO", in *Proc. Entwurf komplexer Automatisierungssysteme : EKA 2010 ; Beschreibungsmittel, Methoden, Werkzeuge und Anwendungen ; 11. Fachtagung mit Tutorium, 25. bis 27. Mai 2010 in Magdeburg, Denkfabrik im Wissenschaftshafen / ifak, Institut für Automation und Kommunikation e.V., Magdeburg; Otto-von-Guericke-Universität Magdeburg, Institut für Automatisierungstechnik. [Hrsg.: Ulrich Jumar, Eckehard Schnieder, Christian Diedrich], Magdeburg, 2010, ifak, pp. 65-74.*

# Sicherheitskonzept für eine intensivmedizinische Anwendung am Beispiel der EMCO

## Bibtex entry :

```
@inproceedings { SLW+10,
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[WLK+10]

PDFBIB

Walter, M., Leonhardt, S., Kopp, R., Wartzek, T., Arens, J., and Stollenwerk, A., "Automatisierung und Fehlerdiagnose bei der extrakorporalen Membranoxygenierung", *Automatisierungstechnik : at*, vol. 58, iss. 5, pp. 277-285, 2010

## Automatisierung und Fehlerdiagnose bei der extrakorporalen Membranoxygenierung

### Bibtex entry :

```
@article { WLK+10,
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}

[WLK+10a]

[PDFBIB](#)

Walter, M., Leonhardt, S., Kopp, R., Arens, J., Weyer, S., and Stollenwerk, A., "A physiological model for extracorporeal oxygenation controller design", *Annual international conference of the IEEE Engineering in Medicine and Biology Society*, vol. 2010, pp. 434-437, 2010

## A physiological model for extracorporeal oxygenation controller design

### Bibtex entry :

```
@article { WLK+10a,
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[KWA+09]

[PDFBIB](#)

Kopp, R., Walter, M., Arens, J., Stollenwerk, A., Leonhardt, S., Schmitz-Rode, T., Kowalewski, S., and Rossaint, R., "Regelungs- und Sicherheitskonzepte für extrakorporale zur Lungenunterstützung", *Biomedizinische Technik = Biomedical engineering*, vol. 54, iss. 5, pp. 289-297, 2009

## Regelungs- und Sicherheitskonzepte für extrakorporale zur Lungenunterstützung

### Bibtex entry :

```
@article { KWA+09,
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author = { Kopp, R{"u}dger and Walter, Marian and Arens, Jutta and  
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[LWW+09]

[PDFBIB](#)

Leonhardt, S., Walter, M., Wartzek, T., Kashefi, A., Stollenwerk, A., and Kopp, R., "Regelung des Gasaustauschs für die extrakorporale Oxygenierung", in *Proc. Automation 2009 : der Automatisierungskongress in Deutschland ; Kongress Baden-Baden, 16. und 17. Juni 2009 ; [10. Branchentreff der Mess- und Automatisierungstechnik] / VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik. - 2067*, Düsseldorf, 2009 in VDI-Berichte, VDI-Verl., pp. 281-285.

## Regelung des Gasaustauschs für die extrakorporale Oxygenierung

### Bibtex entry :

```
@inproceedings { LWW+09,  
author = { Leonhardt, Steffen and Walter, Marian and Wartzek,  
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[10. Branchentreff der Mess- und Automatisierungstechnik] /  
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[SJK09]

[PDFBIB](#)

Stollenwerk, A., Jongdee, C., and Kowalewski, S., "An undergraduate embedded software laboratory for the masses", in *Proc. Workshop on Embedded Systems Education (WESE09)*, Grenoble, France, Grenoble, France, 2009, ACM, pp. 34-41.

## An undergraduate embedded software laboratory for the masses

### Bibtex entry :

```
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```

[SL09]

[PDFBIB](#)

Stollenwerk, A. and Lang, M., "Embedded Contributions to an Intensive Care Safety Concept", in *Proc. ArtistDesign Workshop on Embedded Systems in Healthcare, Eindhoven - The Netherlands*, 2009.

## Embedded Contributions to an Intensive Care Safety Concept

### Bibtex entry :

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@conference { SL09,
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[SWW+09]

[PDFBIB](#)

Stollenwerk, A., Walter, M., Wartzek, T., Kopp, R., Arens, J., and Kowalewski, S., "A safety and control concept for extracorporeal membrane oxygenation", *The international journal of artificial organs*, vol. 32, iss. 7, pp. 428-428, 2009

## A safety and control concept for extracorporeal membrane oxygenation

### Bibtex entry :

```
@article { SWW+09,
  author = { Stollenwerk, André and Walter, Marian and Wartzek,
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  volume = { 32 },
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```

[WLK+09]

[PDFBIB](#)

Walter, M., Leonhardt, S., Kopp, R., Kashefi, A., Wartzek, T., and Stollenwerk, A., "Automation of long term extracorporeal oxygenation systems", in *Proc. ECC 09 : Proceedings of the European Control Conference 2009 ; the 10th in the EUCA Series ; 23-26 August 2009, Budapest, Hungary / General Chair: László Keviczky ...*, Budapest, 2009, EUCA.



# Automation of long term extracorporeal oxygenation systems

## Bibtex entry :

```
@inproceedings { WLK+09,
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[WWS+09]

[PDFBIB](#)

Wartzek, T., Walter, M., Stollenwerk, A., Kopp, R., Kashefi, A., and Leonhardt, S., "Automatisierung der extrakorporalen Membranoxygenierung", in *Proc. Automatisierungstechnische Verfahren für die Medizin : 8. Workshop ; Tagungsband / Thomas Schauer ... (eds.)*, Düsseldorf, 2009 in *Fortschritt-Berichte VDI : Reihe 17, Biotechnik/Medizintechnik*, VDI-Verlag, pp. 25-26.

## Automatisierung der extrakorporalen Membranoxygenierung

### Bibtex entry :

```
@inproceedings { WWS+09,
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[SSG+09]

PDFBIB

Stache, N. C., Stollenwerk, A., Gedicke, J., Olowinsky, A., Knepper, A., and Aach, T., "Automatic Calibration of a Scanner-Based Laser Welding System", *Journal of Laser Applications*, vol. 21, iss. 1, pp. 10-15, 2009, invited paper

## Automatic Calibration of a Scanner-Based Laser Welding System

### Bibtex entry :

```
@article { SSG+09,
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[SSG+07]

PDFBIB

Stache, N. C., Stollenwerk, A., Gedicke, J., Olowinsky, A., Knepper, A., and Aach, T., "Automatic Calibration of a Scanner-Based Laser Welding System", in *Proc. International Congress on the Applications of Lasers and Electro-Optics (ICALEO), Orlando, Florida, USA, 2007*, Laser Institute of America, pp. 223-229, best paper award.

## Automatic Calibration of a Scanner-Based Laser Welding

# System

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