

Dr.-Ing. André Stollenwerk

Kontakt



Gruppenleiter Medizintechnik

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Lehre

Semester	Titel	Art
WS 12/13	Entwicklung eines 3D Replikators	P
WS 11/12	Entwicklung eines 3D Replikators	P
SS 10	Elektrotechnische Grundlagen der Informatik	P
WS 09/10	Hardwarenahe Programmierung	P
SS 09	Elektrotechnische Grundlagen der Informatik	P
WS 08/09	Hardwarenahe Programmierung	P
SS 08	Elektrotechnische Grundlagen der Informatik	P
WS 07/08	Hardwarenahe Programmierung	P

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
- Erarbeitung einer Ansteuerungsautomatik für eine Unabhängige Energieversorgung

Publikationen

[BBF+20]

PDFBIB

Buglowski, M., Bleilevens, C., Fabry, G., Kowalewski, S., and Stollenwerk, A., "Flussgesteuerte pH-Regulierung in einem automatisierten Nierenperfusionssystem", in *Proc. 1*, 2020, Proceedings on Automation in Medical Engineering.

Flussgesteuerte pH-Regulierung in einem automatisierten Nierenperfusionssystem

Bibtex entry :

```
@inproceedings { BBF+20,
```

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author = { Buglowski, Mateusz and Bleilevens, Christian and Fabry,
          Gregor and Kowalewski, Stefan and Stollenwerk, André },
title = { Flussgesteuerte pH-Regulierung in einem automatisierten
          Nierenperfusionssystem },
booktitle = { 1 },
publisher = { Proceedings on Automation in Medical Engineering },
year = { 2020 },
organization = { Automation in Medical Engineering, L{"u}beck
(Germany),
                2020-03-02 - 2020-03-03 },
doi = { 10.18416/AUTOMED.2020 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-2020-02624 },
cin = { 122810 / 120000 },
url = {
https://www.journals.infinite-science.de/index.php/automed/article/view
/329/188 },
}

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[SCE+20]

[PDFBIB](#)

Stollenwerk, A., Chamberlain, R., Edin Grimheden, M., and Taha, W., "An Embedded Graduate Lab Course with Spirit", *Lecture notes in computer science*, vol. 11971, pp. 247-263, 2020

An Embedded Graduate Lab Course with Spirit

Bibtex entry :

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@article { SCE+20,
  author = { Stollenwerk, André and Chamberlain, Roger and Edin
            Grimheden, Martin and Taha, Walid },
  title = { An Embedded Graduate Lab Course with Spirit },
  journal = { Lecture notes in computer science },
  publisher = { Springer },
  pages = { 247-263 },
  volume = { 11971 },
  year = { 2020 },
  address = { Heidelberg },
  issn = { 0302-9743 },
  organization = { Workshop on Embedded Systems and Cyber-Physical
Systems
                  Education, New York (USA) },
  doi = { 10.1007/978-3-030-41131-2_12 },
  typ = { PUB:(DE-HGF)16 },
  reportid = { RWTH-2020-02343 },
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  url = {
http://publications.rwth-aachen.de/record/783168/files/783168.pdf },
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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. [Workshop on Embedded Systems and Cyber-Physical Systems Education, WESE 2019, New York, USA]*, 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,  
    David and Derks, Andreas and Stollenwerk, Andr{e} and  
    Kowalewski, Stefan },  
  title = { A Remote Test Environment for a Large-Scale  
Microcontroller  
  Laboratory Course },  
  booktitle = { [Workshop on Embedded Systems and Cyber-Physical  
Systems  
  Education, WESE 2019, New York, USA] },  
  publisher = { Springer },  
  pages = { 231-246 },  
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  address = { Cham },  
  organization = { Workshop on Embedded Systems and Cyber-Physical  
Systems  
  Education, New York (USA), 2019-10-17 - 2019-10-18 },  
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  reportid = { RWTH-2020-02344 },  
  cin = { 122810 / 120000 },  
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http://publications.rwth-aachen.de/record/783169/files/Remote%20Pool%20  
Final.pdf },  
}
```

[FDG+19]

PDFBIB

Fabry, G., Doorschodt, B. M., Grzanna, T., Boor, P., Elliott, A., 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
          and Boor, Peter and Elliott, Aaron and Stollenwerk, 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] },
  issn = { 2045-2322 },
  doi = { 10.18154/RWTH-2019-08778 },
  typ = { PUB:(DE-HGF)16 },
  reportid = { RWTH-2019-08778 },
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          9790209527000-2 },
  url = {
http://publications.rwth-aachen.de/record/767376/files/767376.pdf },
}
```

[KBS+19]

[PDFBIB](#)

Kühn, 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 Lacković, 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{"u}hn, Jan and Buglowski, Mateusz and Stollenwerk,
André
          and Kowalewski, Stefan and Walter, Marian and Leonhardt,
          Steffen and Petran, Jan and Kopp, R{"u}dger and Rossaint,
          Rolf and Janisch, Thorsten },
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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 Lacković,  
Geoffrey S. Ibbott },  
publisher = { Springer Singapore },  
pages = { 27-32 },  
series = { IFMBE Proceedings },  
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Biomedical  
Engineering, Prague (Czech Republic), 2018-06-03 -  
2018-06-08 },  
doi = { 10.1007/978-981-10-9038-7_6 },  
typ = { PUB:(DE-HGF)7 },  
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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  
Kowalewski, Stefan and Leonhardt, Steffen },  
title = { Deep Learning of Arrhythmia Analysis Based on  
Convolutional  
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journal = { International journal of bioelectromagnetism : IJBEM },  
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pages = { 48-58 },  
volume = { 21 },  
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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. [41st Annual International Conference of the IEEE Engineering in Medicine & Biology Society, EMBC, 2019-07-23 - 2019-07-27, Berlin, Germany]*, 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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  title = { Aided Hand Detection in Thermal Imaging Using RGB Stereo
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  booktitle = { [41st Annual International Conference of the IEEE
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    - 2019-07-27, Berlin, Germany] },
  publisher = { IEEE },
  pages = { 6314-6317 },
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  doi = { 10.1109/EMBC.2019.8856990 },
  typ = { PUB:(DE-HGF)7 },
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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,  
  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  
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Engineering, Aachen (Germany), 2018-09-26 - 2018-09-28 },  
  typ = { PUB:(DE-HGF)6 },  
  reportid = { RWTH-CONV-236288 },  
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[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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  Kowalewski, Stefan and Uguz, Durmus Umutcan and Leonhardt,  
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  title = { Arrhythmia Analysis in a Non-contact cECG Chair using  
Convolutional Neural Network },  
  booktitle = { 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 Universit{"a}t Berlin, Germany, Dr.  
Marian Walter, RWTH Aachen University, Germany, Benjamin  
Hentze, RWTH Aachen University, Germany Markus L{"u}ken,
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RWTH Aachen University, Germany ; Scientific Committee for
ICBEM 2018 in Aachen: Prof. Catherine Disselhorst-Klug, RWTH
Aachen University, Germany [und 27 weitere] },
pages = { 4 Seiten },
year = { 2018 },
address = { Aachen },
organization = { 11th International Conference on
Bioelectromagnetism, Aachen
(Germany), 2018-05-23 - 2018-05-25 },
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typ = { PUB:(DE-HGF)8 },
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cin = { 611010 / 122810 / 120000 },
url = {
http://publications.rwth-aachen.de/record/723536/files/723536.pdf },
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[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
Stollenwerk, André and Kowalewski, Stefan and Leonhardt,
Steffen },
title = { Classification of Obstructive Sleep Apnea Using Machine
Learning },
journal = { American journal of respiratory and critical care
medicine },
publisher = { American Thoracic Society },
pages = { 1 Seite },
volume = { 197 },
number = { Abstract Issue },
year = { 2018 },
address = { New York, NY },
issn = { 0003-0805 },
organization = { International Conference of the American-Thoracic-
Society,
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 },  
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[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,  
  author = { Pomprapa, Anake and Ahmed, Waqar and Stollenwerk, André  
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  pages = { 47-50 },  
  volume = { 20 },  
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  year = { 2018 },  
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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

Mock loop for bubble generation in a centrifugal blood pump for fault simulation

Bibtex entry :

```
@article { SBK18,
  author = { Stollenwerk, André and Buglowski, Mateusz and K{"u}hn,
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  pages = { 33-36 },
  volume = { 4 },
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  typ = { PUB:(DE-HGF)16 },
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[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,
  author = { Smieschek, Manfred and Hinrichs, Timo and Stollenwerk,
  André and Kowalewski, Stefan and Preu{\ss}, R{"u}diger },
  title = { A New Condition Indicator for Slow-Rotating Roller Chains
  based on the Angle and Torque of the Driving Motor },
  booktitle = { 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 },
  publisher = { IEEE },
  pages = { 642-644 },
  year = { 2018 },
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address = { Piscataway, NJ },
organization = { 14th International Conference on Automation
Science and
Engineering, Munich (Germany), 2018-08-20 - 2018-08-24 },
doi = { 10.1109/COASE.2018.8560542 },
typ = { PUB:(DE-HGF)7 },
reportid = { RWTH-CONV-236282 },
cin = { 122810 / 120000 },
url = { http://publications.rwth-aachen.de/record/752188 },
}
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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,
Danny
and Aiche, Stephan and Beyan, Oya Deniz and Bischoff, Verena
and Daumke, Philipp and Decker, Stefan Josef and Funkat,
Gert and Gewehr, Jan E. and de Greiff, Armin and Haferkamp,
Silke Dorothee and Hahn, Udo and Henkel, Andreas and
Kirsten, Toralf and Kl{\o}ss, Thomas and Lippert, J{\o}rg
and L{\o}be, Matthias and Lowitsch, Volker and Maassen,
Oliver and Maschmann, Jens and Meister, Sven and
Mikolajczyk, Rafael and N{\u}chter, Matthias and Pletz,
Mathias W. and Rahm, Erhard and Riedel, Morris and Saleh,
Kutaiba and Schuppert, Andreas and Smers, Stefan and
Stollenwerk, André and Uhlig, Stefan and Wendt, Thomas and
Zenker, Sven and Fleig, Wolfgang and Marx, Gernot and
Scherag, André and L{\o}ffler, Markus },
title = { Smart Medical Information Technology for Healthcare
(SMITH)
: Data Integration based on Interoperability Standards },
journal = { Methods of information in medicine },
pages = { e92-e105 },
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volume = { 57 },
number = { S 01 },
year = { 2018 },
issn = { 2511-705X },
doi = { 10.3414/ME18-02-0004 },
typ = { PUB:(DE-HGF)16 },
reportid = { RWTH-CONV-237913 },
cin = { 528500-2533000-2 / 122810 / 120000 / 121810 },
url = {
http://publications.rwth-aachen.de/record/757852/files/757852.pdf },
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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 :

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@article { BMK+17,
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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 :

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@article { KBS+17,  
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[SKS+17]

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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 :

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@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 :

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[SSM+17]

[PDFBIB](#)

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

Bibtex entry :

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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., Leonhardt, S., Walter, M., and Misgeld, B. J. E., "Closed-loop control of extracorporeal oxygen and carbon dioxide gas transfer", *Control engineering practice*, p. 10, 2016

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

Bibtex entry :

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@article { BHK+16,  
  author = { Brendle, Christian and Hackmack, K.-F. and K{"u}hn, Jan  
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[BHK+16a]

[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 :

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@article { BHK+16a,  
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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

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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"Aachen, Germany: RWTH Aachen, 2016, vol. 1559, pp. 187-194.

Sensor Supervision and Control Value Limitations in Networked Intensive Care

Bibtex entry :

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@inbook { KSB+16,
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Andreas Krall, Dieter Landes, Horst Lichter, Dirk Riehle,
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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 Rezirkulationsmessung 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 Rezirkulationsmessung für eine ECLA-Therapie

Bibtex entry :

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@inproceedings { KVS+16,  
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DGBMT - Deutsche Gesellschaft für Biomedizinische  
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[SS]+16]

PDFBIB

Smieschek, M., Stollenwerk, A., Jüptner, P., Kowalewski, S., Orlikowsky, T., and Schoberer, M., "Evaluating Hand Disinfection with Alcohol-Based Hand Sanitizers Using Thermal Imaging" Aachen, Germany: RWTH Aachen, 2016, vol. 1559, pp. 174-181.

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

Bibtex entry :

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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

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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)

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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]*, 2016, 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., Leonhardt, S., and Walter, M., "In silico evaluation of gas transfer estimation during extracorporeal membrane oxygenation", *IFAC-PapersOnLine*, vol. 48, iss. 20, 2015

In silico evaluation of gas transfer estimation during extracorporeal membrane oxygenation

Bibtex entry :


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

[PDFBIB](#)

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Bibtex entry :

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

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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

Bibtex entry :

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

[PDFBIB](#)

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

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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.

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[SKW+15]

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[SLR+15]

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[SKB+14a]

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Bibtex entry :

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@inproceedings { SKB+14a,  
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[PMS+13]

[PDFBIB](#)

Pomprapa, A., Misgeld, B., Sorgato, V., Stollenwerk, A., Walter, M., and Leonhardt, S., "Robust Control of End-Tidal CO₂ using the H_∞ Loop-Shaping Approach", *Acta polytechnica = Journal of advanced engineering*, vol. 53, pp. 895-900, 2013

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[Sto13]

[PDFBIB](#)

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[WBS+13]

[PDFBIB](#)

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Patient oriented closed loop control of extracorporeal lung assist

Bibtex entry :

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@inproceedings { WBS+13,  
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[WSB+13]

[PDFBIB](#)

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@article { WSB+13,
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[KRS12]

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[WBB+12]

[PDFBIB](#)

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Bibtex entry :

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@inproceedings { WBB+12,  
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[WBS+12]

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Bibtex entry :

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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 :

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@inproceedings { KBW+11,
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[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.

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@conference { KS11,  
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[SGA+11]

[PDFBIB](#)

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@inproceedings { SGA+11,  
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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

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Bibtex entry :

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

[PDFBIB](#)

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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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Devices,  
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[WBA+11]

[PDFBIB](#)

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journal of artificial organs*, Milano [u.a.], 2011, vol. 34 in 2011, Wichtig, pp. 625-625.

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Bibtex entry :

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@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. ASAI0 journal*, Hagerstown, Md., 2010, vol. 56, Lippincott, pp. 96-96.

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

Bibtex entry :

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@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 :

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@inproceedings { SDK10,
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http://www.artist-embedded.org/docs/Events/2010/WESE/Proceedings_WESE_2
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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 :

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

PDFBIB

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Modellbasierte Fehlerdiagnose eines Membranoxygenators

Bibtex entry :

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@article { SJW+10,
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[SLW+10]

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Sicherheitskonzept für eine intensivmedizinische Anwendung am Beispiel der EMCO

Bibtex entry :

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@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](#)

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A physiological model for extracorporeal oxygenation controller design

Bibtex entry :

```

@article { WLK+10a,
  author = { Walter, Marian and Leonhardt, Steffen and Kopp, R{\ "u}dger
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[KWA+09]

[PDFBIB](#)

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Regelungs- und Sicherheitskonzepte für extrakorporale zur Lungenunterstützung

Bibtex entry :

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@article { KWA+09,  
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[LWW+09]

PDFBIB

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Bibtex entry :

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

[PDFBIB](#)

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An undergraduate embedded software laboratory for the masses

Bibtex entry :

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@inproceedings { SJK09,
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}

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[SL09]

[PDFBIB](#)

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Bibtex entry :

```
@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 :

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@article { SWW+09,  
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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.

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Bibtex entry :

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@inproceedings { WLK+09,
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Conference 2009
; the 10th in the EUCA Series ; 23-26 August 2009, Budapest,
Hungary / General Chair: László Keviczky ... },
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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 :

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@inproceedings { WWS+09,
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and Kopp, R{"u}dger and Kashefi, Ali and Leonhardt, Steffen },
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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 :

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@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

Bibtex entry :

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@inproceedings { SSG+07,  
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