

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 pulsatischen 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

[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", *IFMBE Proceedings*, vol. 68/2, pp. 27-32, 2019

Fault Identification in a Blood Pump Using Neural Networks

Bibtex entry :

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@article { KBS+19,
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author = { K{"u}hn, Jan and Buglowski, Mateusz and Stollenwerk,
Andre
and Kowalewski, Stefan and Walter, Marian and Leonhardt,
Steffen and Petran, Jan and Kopp, R{"u}dger and Rossaint,
Rolf and Janisch, Thorsten },
title = { Fault Identification in a Blood Pump Using Neural
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journal = { IFMBE Proceedings },
year = { 2019 },
volume = { 68/2 },
pages = { 27--32 },
publisher = { Springer },
publishedas = { Online Druck },
issn = { 1680-0737 },
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illprojectkey = { AutoMock },
language = { eng },
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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", in *Proc. 52nd Annual Conference of the German Society for Biomedical Engineering*, 2018, To appear.

A long-term setup for kidney perfusion

Bibtex entry :

```

@conference { KSK+18,
author = { K{"u}hn, Jan and Stollenwerk, Andr\{'e} and Kowalewski,
Stefan and Fabry, Gregor and Grzanna, Tim and Doorschodt,
Benedict and Tolba, Ren\{'e} H. and Rossaint, Rolf and
Bleilevens, Christian },
title = { A long-term setup for kidney perfusion },
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note = { To appear },
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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", in *Proc. Current Directions in Biomedical Engineering*, 2018 in 4, deGruyter, pp. 33-36.

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

Bibtex entry :

```
@inproceedings { SBK18,  
  doi = { 10.1515/cdbme-2018-0009 },  
  author = { Stollenwerk, Andr\{e} and Buglowski, Mateusz and  
K{\u}hn,  
  Jan },  
  editor = { D{\o}ssel, Olaf },  
  title = { Mock loop for bubble generation in a centrifugal blood  
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  for fault simulation },  
  booktitle = { Current Directions in Biomedical Engineering },  
  series = { 4 },  
  number = { 1 },  
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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. 14th IEEE International Conference on Automation Science and Engineering (CASE)*, 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 :

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@inproceedings { SHS+18,
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author = { Smieschek, Manfred and Hinrichs, Timo and Stollenwerk,
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title = { A New Condition Indicator for Slow-Rotating Roller Chains
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booktitle = { 14th IEEE International Conference on Automation
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language = { eng },
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for_reporting_period = { 2018 },
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[WSA+18]

[PDFBIB](#)

Winter, A., Stäubert, S., Ammon, D., Aiche, S., Beyan, O., Bischoff, V., Daumke, P., Decker, S., Funkat, G., Gewehr, J. E., de Greiff, A., Haferkamp, S., Hahn, U., Henkel, A., Kirsten, T., Thomas, K., 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)", *Methods of information in medicine*, vol. 57, p. e92-e105, 2018

Smart Medical Information Technology for Healthcare (SMITH)

Bibtex entry :

```

@article { WSA+18,
  doi = { 10.3414/ME18-02-0004 },
  author = { Winter, Alfred and St{"a}ubert, Sebastian and Ammon,
            Danny
            and Aiche, Stephan and Beyan, Oya and Bischoff, Verena and
            Daumke, Philipp and Decker, Stefan and Funkat, Gert and
            Gewehr, Jan E and de Greiff, Armin and Haferkamp, Silke 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, Andr{'e} and
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            L{"o}ffler, Markus },

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(SMITH) },  
journal = { Methods of information in medicine },  
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publisher = { Schattauer GmbH },  
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language = { eng },  
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https://www.thieme-connect.com/products/ejournals/pdf/10.3414/ME18-02-0004.pdf },  
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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., Misgeld, B., Leonhardt, S., and and Walter, M., "Continuous gas transfer monitoring during extracorporeal membrane oxygenation", *Biomedical Signal Processing and Control*, vol. 31, pp. 321-330, 2017, To appear

Continuous gas transfer monitoring during extracorporeal membrane oxygenation

Bibtex entry :

```
@article { BHK+17,  
author = { Brendle, C. and Hackmack, K.-F. and K{"u}hn, J. and  
Wardeh,  
M.N. and Janisch, T. and Kopp, R. and Rossaint, R. and  
Stollenwerk, A. and Kowalewski, S. and Misgeld, B. and  
Leonhardt, S and and Walter, M. },  
title = { Continuous gas transfer monitoring during extracorporeal  
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journal = { Biomedical Signal Processing and Control },  
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[BHK+17a]

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., "Closed-loop control of extracorporeal oxygen and carbon dioxide gas transfer", *Control Engineering Practice*, vol. 59, pp. 173-182, 2017, To appear

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

Bibtex entry :

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@article { BHK+17a,
  author = { Brendle, C. and Hackmack, K.-F. and Kühn, J. and Wardeh, M.N. and Janisch, T. and Kopp, R. and Rossaint, R. and Stollenwerk, A. and Kowalewski, S. and Leonhardt, S. and Walter, M. and Misgeld, B. },
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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., Leonhardt, S., and Walter, M., "Physiological closed-loop control of mechanical ventilation and extracorporeal membrane oxygenation", *Biomedical Engineering / Biomedizinische Technik*, 2017, To appear

Physiological closed-loop control of mechanical

ventilation and extracorporeal membrane oxygenation”

Bibtex entry :

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@article { BMK+17,  
  author = { Brendle, C. and M{"u}lders, T. and K{"u}hn, J. and  
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    A. and Kowalewski, S. and Misgeld, B. and Leonhardt, S. and  
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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", *Biomedical Engineering / Biomedizinische Technik*, vol. 62, pp. 213-223, 2017

Decentralized safety concept for closed-loop controlled intensive care

Bibtex entry :

```
@article { KBS+17,  
  author = { K{"u}hn, J. and Brendle, C. and Stollenwerk, A. and  
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[SKS]17]

[PDFBIB](#)

Stollenwerk, A., Kopp, R., Sehl, F., and Janisch, T., "Tauchcomputerunterstützung durch vernetzte Smart Wearables", *caisson*, vol. 32, iss. 4, p. 72, 2017

Tauchcomputerunterstützung durch vernetzte Smart Wearables

Bibtex entry :

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@article { SKSJ17,  
  number = { 4 },  
  author = { Stollenwerk, André and Kopp, R{"u}dger and Sehl,  
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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", *Informatik Aktuell*, pp. 147-152, 2017

Unterstützte Handerkennung in Thermographiebildern zur Validierung der hygienischen Händedesinfektion

Bibtex entry :

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@article { SSK+17,  
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zur
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journal = { Informatik Aktuell },
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language = { ger },
url = {
http://link.springer.com/chapter/10.1007/978-3-662-54345-0_35 },
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for_reporting_period = { 2017 },
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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. 14th International Conference on Wearable and Implantable Body Sensor Networks*, 2017, IEEE, pp. 169-172.

Enrichment of a diving computer with body sensor network data

Bibtex entry :

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@inproceedings { SSM+17,
  doi = { 10.1109/BSN.2017.7936034 },
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  title = { Enrichment of a diving computer with body sensor network
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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. Fail Safety in Medical Cyber-Physical Systems*, 2016, vol. 1559 in Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE 2016), CEUR Workshop Proceedings, pp. 187-194.

Sensor Supervision and Control Value Limitations in Networked Intensive Care

Bibtex entry :

```
@inproceedings { KSB+16,
  author = { Kühn, Jan and Stollenwerk, André and Brendle, Christian and Janisch, Thorsten and Walter, Marian and Rossaint, Rolf and Leonhardt, Steffen and Kowalewski, Stefan and Kopp, Rüdiger },
  editor = { Zimmermann, Wolf and Alperowitz, Lukas and Brügge, Bernd and Fahsel, Jörg and Herrmann, Andrea and Hoffmann, Anne and Krall, Andreas and Landes, Dieter and Lichter, Horst and Riehle, Dirk and Schaefer, Ina and Scheuermann, Constantin and Schläefer, Alexander and Schupp, Sibylle and Seitz, Andreas and Steffens, Andreas and Stollenwerk, André and Weisbach, Rüdiger },
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[KVS+16]

PDFBIB

Kühn, J., Vaitl, L., Stollenwerk, A., Brendle, C., Walter, M., Janisch, T., Leonhardt, S., Kowalewski, S., Rossaint, R., and Kopp, R., "Eingebettete Rezirkulationsmessung für eine ECLA-Therapie", in

Proc. AUTOMED Workshop, 2016, To appear.

Eingebettete Rezirkulationsmessung für eine ECLA-Therapie

Bibtex entry :

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@conference { KVS+16,  
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[SSJ+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", in *Proc. Fail Safety in Medical Cyber-Physical Systems*, 2016, vol. 1559 in Gemeinsamer Tagungsband der Workshops der Tagung Software Engineering 2016 (SE 2016), CEUR Workshop Proceedings, pp. 174-181.

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

Bibtex entry :

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@inproceedings { SSJ+16,  
  author = { Smieschek, Manfred and Stollenwerk, Andr{'e} and  
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  editor = { Zimmermann, Wolf and Alperowitz, Lukas and Br{"u}gge,  
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    Riehle, Dirk and Schaefer, Ina and Scheuermann, Constantin  
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    year = { 2016 },
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    for_reporting_period = { 2016 },
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[SSS16]

[PDFBIB](#)

Schlaefer, A., Schupp, S., and Stollenwerk, A., "2nd Workshop on Fail Safety in Medical Cyber-Physical Systems (FS-MCPS)", in *Proc. Software Engineering 2016*, 2016, vol. P-252 in Lecture Notes in Informatics, Gesellschaft für Informatik, pp. 127-128.

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

Bibtex entry :

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@inproceedings { SSS16,
  author = { Schlaefer, Alexander and Schupp, Sibylle and
Stollenwerk,
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  editor = { Knoop, Jens and Zdun, Uwe },
  title = { 2nd Workshop on Fail Safety in Medical Cyber-Physical
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  series = { Lecture Notes in Informatics },
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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. 12th German Russian Conference on Biomedical Engineering*, 2016.

Assistive Control of Extracorporeal Oxygenation Systems

Bibtex entry :

```
@conference { WBK+16,  
  author = { Walter, M. and Brendle, C. and Kühn, J. and Janisch,  
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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", in *Proc. 9th IFAC Symposium on Biological and Medical Systems*, 2015, vol. 48, IFAC-PapersOnLine, pp. 499-504.

In silico evaluation of gas transfer estimation during extracorporeal membrane oxygenation

Bibtex entry :

```
@inproceedings { BHK+15,  
  doi = { 10.1016/j.ifacol.2015.10.190 },  
  author = { Brendle, Christian and Hackmack, Kay-Florian and  
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    Jan and Wardeh, Markus Nabil and Kopp, Rolf and  
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http://www.sciencedirect.com/science/article/pii/S2405896315020819 },
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[KBS+15]

[PDFBIB](#)

Kühn, J., Brendle, C., Stollenwerk, A., Walter, M., Wardeh, N., Rossaint, R., Leonhardt, S., Kowalewski, S., and Kopp, R., "Pulsatile Ansteuerung einer Diagonalblutpumpe", *atp edition - Automatisierungstechnische Praxis*, vol. 10, pp. 52-59, 2015

Pulsatile Ansteuerung einer Diagonalblutpumpe

Bibtex entry :

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@article { KBS+15,
  author = { K{"u}hn, Jan and Brendle, Christian and Stollenwerk,
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  year = { 2015 },
  volume = { 10 },
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  publisher = { DIV Deutscher Industrieverlag GmbH },
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[KBS+15a]

PDFBIB

Kopp, R., Bensberg, R., Stollenwerk, A., Arens, J., Grottko, O., Walter, M., and Rossaint, R., "Automatic Control of veno-venous Extracorporeal Lung Assist", *Artificial Organs*, 2015, To appear

Automatic Control of veno-venous Extracorporeal Lung Assist

Bibtex entry :

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@article { KBS+15a,  
  author = { Kopp, R{"u}dger and Bensberg, Ralf and Stollenwerk,  
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[KSS+15]

PDFBIB

Kühn, J., Schoonbrood, P., Stollenwerk, A., Walter, M., Brendle, C., Wardeh, N., Rossaint, R., Leonhardt, S., Kowalewski, S., and Kopp, R., "Safety Conflict Analysis in Medical Cyber-Physical Systems using an SMT-Solver", in *Proc. Fail Safety in Medical Cyber-Physical Systems*, 2015, vol. 1337, CEUR Workshop Proceedings, pp. 19-23.

Safety Conflict Analysis in Medical Cyber-Physical Systems using an SMT-Solver

Bibtex entry :

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@inproceedings { KSS+15,  
  author = { K{"u}hn, Jan and Schoonbrood, Pierre and Stollenwerk,  
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    and Heinrich, Robert and Jung, Reiner and Konersmann, Marco
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[KWS+15]

[PDFBIB](#)

Kühn, J., Wübbels, N., Stollenwerk, A., Walter, M., Brendle, C., Wardeh, N., Rossaint, R., Leonhardt, S., Kowalewski, S., and Kopp, R., "Pulsatile Ansteuerung einer Diagonalblutpumpe", in *Proc. Automation 2015*, 2015, VDI Verlag, pp. 325-339.

Pulsatile Ansteuerung einer Diagonalblutpumpe

Bibtex entry :

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@inproceedings { KWS+15,
    author = { K{"u}hn, Jan and W{"u}bbels, Nico and Stollenwerk,
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[SKW+15]

[PDFBIB](#)

Stollenwerk, A., Kühn, J., Walter, M., Brendle, C., Wardeh, 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. Fail Safety in Medical Cyber-Physical Systems*, 2015, vol. 1337, CEUR Workshop Proceedings, pp. 1-6.

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

Bibtex entry :

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@inproceedings { SKW+15,  
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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. 19th World Congress of the International Federation of Automatic Control*, 2014, pp. 6593-6598.

Model-based supervision of a blood pump

Bibtex entry :

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@inproceedings { SKB+14,
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  language = { eng },
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  for_reporting_period = { 2014 },
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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*, vol. 53, pp. 895-900, 2013

Robust Control of End-Tidal CO₂ using the H[∞] Loop-Shaping Approach

Bibtex entry :

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@article { PMS+13,
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timestamp = { 2014.01.06 },  
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[Sto13]

[PDFBIB](#)

Stollenwerk, A., "Ein modellbasiertes Sicherheitskonzept für die extrakorporale Lungenunterstützung," PhD Thesis , 2013.

Ein modellbasiertes Sicherheitskonzept für die extrakorporale Lungenunterstützung

Bibtex entry :

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@phdthesis { Sto13,  
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[WSB+13]

[PDFBIB](#)

Walter, M., Stollenwerk, A., Bensberg, R., Kopp, R., and Leonhardt, S., "Smart ECLA—closed loop control of O₂ and CO₂ 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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timestamp = { 2014.01.06 },
for_reporting_period = { 2014 },
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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*, 2012 in VDI Berichte, VDI-Verlag, pp. 113-116, Langfassung auf CD-Rom.

Cyber-Physical Systems - eine Herausforderung an die Automatisierungstechnik?

Bibtex entry :

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@inproceedings { KRS12,
author = { Kowalewski, Stefan and Rumpe, Bernhard and Stollenwerk,
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title = { Cyber-Physical Systems - eine Herausforderung an die
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booktitle = { Automation 2012 },
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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. Journal of Critical Care*, 2012, vol. 28, Elsevier, p. e8-e9.

Patient oriented closed loop control of extracorporeal lung assist

Bibtex entry :

```
@inproceedings { WBS+12,  
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[BBS+11]

[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 :

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@inproceedings { BBS+11,  
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[BBSK11]

[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 2011*, 2011, IEEE, pp. 33-40.

Analyzing Embedded Systems Code for Mixed-Critical Systems using Hybrid Memory Representations

Bibtex entry :

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@inproceedings { BBSK11,
  location = { Newport Beach, CA, USA },
  doi = { 10.1109/ISORCW.2011.40 },
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[KBW+11]

[PDFBIB](#)

Kopp, R., Bensberg, R., Walter, M., Stollenwerk, A., Arens, J., and Rossaint, R., "Automation of extracorporeal membrane oxygenation using a combined safety and control concept", in *Proc. Intensive Care Medicine*, 2011, vol. 37, Springer, p. 230.

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

Bibtex entry :

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@inproceedings { KBW+11,  
  volume = { 37 },  
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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*, Invited Talk.

Supporting Evolving Requirements in CPS by Abstraction Layers in the Architecture

Bibtex entry :

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@conference { KS11,
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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. 38. Congress of the European Society for Artificial Organs (ESAO 2011) and 4. Biennial Congress of the International Federation on Artificial Organs (IFAO 2011) - (The International Journal of Artificial Organs)*, 2011, vol. 34 in 2011, Wichtig Editore, p. 617.

Safety Aware Pump-Control for a Rotary ECMO Blood Pump**Bibtex entry :**

```
@inproceedings { SGA+11,
  volume = { 34 },
  month = { August },
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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", in *Proc. 45. Jahrestagung der Deutschen Gesellschaft für Biomedizinische Technik*, 2011, DGBMT.

A Model-Based Safety Concept for a Rotary Blood Pump

Bibtex entry :

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

[PDFBIB](#)

Stollenwerk, A., Göbe, F., Walter, M., Kopp, R., Arens, J., and Kowalewski, S., "Smart Data Provisioning for Model-Based Generated Code in an Intensive Care Application", in *Proc. High Confidence Medical Devices, Software, and Systems and Medical Device Plug-and-Play Interoperability (HCMDSS/MDPnP 2011)*, Chicago, USA, 2011, Upenn, p. 8.

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

Bibtex entry :

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@inproceedings { SGW+11,
  owner = { stollenwerk },
  author = { Stollenwerk, Andr{'e} and G{"o}be, Florian and Walter,
    Marian and Kopp, R{"u}dger and Arens, Jutta and Kowalewski,
    Stefan },
  title = { Smart Data Provisioning for Model-Based Generated Code in
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  Intensive Care Application },
  booktitle = { High Confidence Medical Devices, Software, and
Systems and
  Medical Device Plug-and-Play Interoperability (HCMDSS/MDPnP
  2011), Chicago, USA },
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  language = { eng },
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  year = { 2011 },
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  url = { http://publications.embedded.rwth-aachen.de/file/49 },
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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. 38. Congress of the European Society for Artificial Organs(ESAO 2011) and 4. Biennial Congress of the International Federation on Artificial Organs (IFAO 2011) - (The International Journal of Artificial Organs)*, 2011, vol. 34 in 2011, Wichtig Editore, p. 625.

Physiological target control in long term extracorporeal oxygenation

Bibtex entry :

```
@inproceedings { WBA+11,
  month = { August },
  organization = { European Society for Artificial Organs (ESAO) },
  doi = { DOI 10.5301/IJA0.2011.8701 },
  location = { Porto },
  author = { Walter, Marian and Brendle, Christian and Arens, Jutta
and
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Stollenwerk, Andre and Kopp, R{"u}dger and Bensberg, Ralf
and Leonhardt, Steffen },
editor = { Rui L. Reis },
title = { Physiological target control in long term extracorporeal
oxygenation },
booktitle = { 38. Congress of the European Society for Artificial
Organs(ESAO 2011) and 4. Biennial Congress of the
InternationalFederation on Artificial Organs (IFA0 2011) -
(TheInternational Journal of Artificial Organs) },
series = { 2011 },
volume = { 34 },
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[WBB+11]

[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*, Heidelberg, 2011, vol. 37 in IFMBE Proceedings, Springer, pp. 319-322.

Closed loop physiological ECMO control

Bibtex entry :

```
@inproceedings { WBB+11,
  location = { Budapest },
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and
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and Leonhardt, Steffen },
  editor = { \'{A}kos Jobb\{a}gy },
  title = { Closed loop physiological ECMO control },
  booktitle = { 5th European Conference of the International
Federation for
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series = { IFMBE Proceedings },
publisher = { Springer },
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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", *ASAIO journal*, vol. 56, iss. 2, pp. 96-96, 2010

A Dynamic Study on the Hemolytic Effect of Negative Pressure on Blood

Bibtex entry :

```

@article { ADM+10,
  number = { 2 },
  address = { Hagerstown, Md. },
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  author = { Arens, Jutta and De Brouwer, Petra and Mager, Ilona and
    Kopp, R{"u}dger and Walter, Marian and Stollenwerk, Andre
    and Schmitz-Rode, Thomas and Steinseifer, Ulrich },
  title = { A Dynamic Study on the Hemolytic Effect of Negative
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  journal = { ASAIO journal },
  year = { 2010 },
  volume = { 56 },
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  publisher = { Lippincott },
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  for_reporting_period = { 2011 },
}

```

[SDKS10]

PDFBIB

Stollenwerk, A., Derks, A., Kowalewski, S., and Salewski, F., "A Modular, Robust and Open Source Microcontroller Platform for Broad Educational Usage", in *Proc. Workshop on Embedded Systems Education (WESE10)*, Scottsdale, AZ, USA, 2010, ACM, pp. 48-54.

A Modular, Robust and Open Source Microcontroller Platform for Broad Educational Usage

Bibtex entry :

```
@inproceedings { SDKS10,
  month = { October },
  organization = { ARTIST },
  location = { Scottsdale, AZ,USA },
  author = { Stollenwerk, Andr{'e} and Derks, Andreas and
Kowalewski,
  Stefan and Salewski, Falk },
  title = { A Modular, Robust and Open Source Microcontroller
Platform
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Scottsdale,
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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", *The International Journal of Artificial Organs*, vol. 33, iss. 7, p. 447, 2010

Model Based Diagnosis for Extracorporeal Membrane Oxygenation

Bibtex entry :

```
@article { SJA+10,
  number = { 7 },
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    part = { 63 },
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Organs
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Arens,
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    title = { Model Based Diagnosis for Extracorporeal Membrane
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    journal = { The International Journal of Artificial Organs },
    year = { 2010 },
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[SJW+10]

[PDFBIB](#)

Stollenwerk, A., Jörgens, J., Walter, M., Arens, J., Kopp, R., and Kowalewski, S., "Modellbasierte Fehlerdiagnose eines Membranoxygenators", in *Proc. Biomedizinische Technik (BMT2010)*, 2010, vol. 55, de Gruyter, pp. 174-177.

Modellbasierte Fehlerdiagnose eines Membranoxygenators

Bibtex entry :

```

@inproceedings { SJW+10,
    volume = { 55 },
    month = { Oktober },
    organization = { VDE },
    doi = { 10.1515/BMT.2010.713 },
    location = { Rostock / Warnem{"u}nde, Germany },
    author = { Stollenwerk, Andr{'e} and J{"orgens, J{"org and
Walter,
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publishedas = { Druck },
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for_reporting_period = { 2010 },
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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 ECMO", in *Proc.
Entwurf komplexer Automatisierungssysteme (EKA 2010)*, 2010, vol. 11, pp. 65-74.

Sicherheitskonzept für eine intensivmedizinische Anwendung am Beispiel der ECMO

Bibtex entry :

```
@inproceedings { SLW+10,
  location = { Magdeburg, Germany },
  volume = { 11 },
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Marian
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  title = { Sicherheitskonzept f{"u}r eine intensivmedizinische
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```

[WSW+10]

[PDFBIB](#)

Walter, M., Stollenwerk, A., Wartzek, T., Arens, J., Kopp, R., and Leonhardt, S., "Automatisierung
und Fehlerdiagnose bei der extrakorporalen Membranoxygenierung", *at* -

Automatisierungstechnik, vol. 58, iss. 5, pp. 277-285, 2010

Automatisierung und Fehlerdiagnose bei der extrakorporalen Membranoxygenierung

Bibtex entry :

```
@article { WSW+10,  
  number = { 5 },  
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  author = { Walter, Marian and Stollenwerk, Andr{\e} and Wartzek,  
    Tobias and Arens, Jutta and Kopp, R{"u}dger and Leonhardt,  
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  title = { Automatisierung und Fehlerdiagnose bei der  
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  journal = { at - Automatisierungstechnik },  
  year = { 2010 },  
  volume = { 58 },  
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[WWS+10]

[PDFBIB](#)

Walter, M., Weyer, S., Stollenwerk, A., Kopp, R., Arens, J., and Leonhardt, S., "A Physiological Model for Extracorporeal Oxygenation Controller Design", in *Proc. 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'10)*, 2010, IEEE, pp. 434-437.

A Physiological Model for Extracorporeal Oxygenation Controller Design

Bibtex entry :

```
@inproceedings { WWS+10,  
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month = { September },
organization = { IEEE },
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title = { A Physiological Model for Extracorporeal Oxygenation
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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 Systeme zur Lungenunterstützung / Automatic control and safety concepts for extracorporeal lung support", *Biomedizinische Technik*, vol. 54, iss. 5, pp. 289-297, 2009

Regelungs- und Sicherheitskonzepte für extrakorporale Systeme zur Lungenunterstützung / Automatic control and safety concepts for extracorporeal lung support

Bibtex entry :

```
@article { KWA+09,
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  modellbasierte Sicherheitskonzepte, Regelungstechnik, acute
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  author = { Kopp, R{"u}dger and Walter, Marian and Arens, Jutta and
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    journal = { Biomedizinische Technik },
    year = { 2009 },
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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, Baden-Baden, Germany*, 2009, vol. 2067, VDI, pp. 281-284.

Regelung des Gasaustauschs für die extrakorporale Oxygenierung

Bibtex entry :

```

@inproceedings { LWW+09,
    month = { Juni },
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    volume = { 2067 },
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[SJK09]

[PDFSlides](#)[BIB](#)

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*, New York, NY, USA, 2009, ACM, pp. 34-41.

An Undergraduate Embedded Software Laboratory for the Masses

Bibtex entry :

```
@inproceedings { SJK09,  
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```

[SL09]

[PDFSlides](#)[BIB](#)

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, Invited Talk.

Embedded Contributions to an Intensive Care Safety Concept

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, p. 428, 2009

A Safety and Control Concept for Extracorporeal Membrane Oxygenation

Bibtex entry :

```
@article { SWW+09,
  author = { Stollenwerk, Andr{'e} and Walter, Marian and Wartzek,
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  journal = { The International Journal of Artificial Organs },
  year = { 2009 },
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http://www.artificial-organs.com/public/ijao/Article.action?cmd=navigat  
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[WWK+09]

PDFBIB

Walter, M., Wartzek, T., Kopp, R., Stollenwerk, A., Kashefi, A., and Leonhardt, S., "Automation of Long Term Extracorporeal Oxygenation Systems", in *Proc. European Control Conference (ECC09), Budapest, Hungary, 2009*, European Union Control Association.

Automation of Long Term Extracorporeal Oxygenation Systems

Bibtex entry :

```
@inproceedings { WWK+09,  
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Hungary },  
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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. 8. Workshop AUTOMED - Automatisierungstechnische Verfahren für die Medizin, Berlin, Germany, 2009*, vol. 17, VDI-Verlag, pp. 25-26, Best Paper Award.

Automatisierung der extrakorporalen Membranoxygenierung

Bibtex entry :

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@inproceedings { WWS+09,
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    Leonhardt, Steffen },
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},
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Verfahren
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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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note = { invited paper },
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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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  year = { 2007 },
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  publisher = { Laser Institute of America },
  note = { best paper award },
  comment = { http://www.laserinstitute.org/store/%20ICAL07\_M804 },
  doi = { 10.2351/1.3071317 },
  url = {
http://www.lfb.rwth-aachen.de/files/publications/2007/STA07c.pdf },
}
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