

Markus Göllles

Contact details:

Markus Göllles

BEST – Bioenergy and Sustainable Technologies GmbH
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Field of work:

Modelling and control of thermochemical, thermotechnical and biotechnological processes and systems
 Cross-sectoral energy and resource management

Professional activities:

- | | |
|-------------|--|
| Since 2005 | Research associate at the competence centre
BEST – Bioenergy and Sustainable Technologies GmbH
(former <i>BIOENERGY 2020+</i> and <i>Austrian Bioenergy Centre</i>) |
| Since 2015 | <i>Area Manager</i>
Automation and Control |
| 2013 – 2015 | <i>Area Manager</i>
Combustion – Medium- and large-scale combustion systems
Organisational management of the area
(divided into 2 working groups)
Technical and organisational management of the
working group for automation and control |
| 2008 – 2013 | <i>Senior Researcher</i>
Establishment and management of a
working group for automation and control |
| 2005 – 2008 | <i>Junior Researcher</i>
Work area: Control of biomass furnaces |
| Since 2016 | Lecturer at University of Natural Resources and Life Sciences, Vienna |
| Since 2019 | <i>Automation of bioprocesses</i> (L, several lecturers)
Programme: Biotechnology (MSc), Bioprocess Engineering (PhD) |
| Since 2016 | <i>Measurement and control systems</i> (L, 3 ECTS)
Programme: Food Science and Biotechnology (BSc) |
| Since 2011 | Lecturer at Graz University of Technology |
| Since 2012 | <i>Measurement and Control Engineering for Process Engineers</i>
(L, 3 ECTS + P, in 2012&2013, 1 ECTS)
Programme: Chemical and Process Engineering (BSc) |
| 2011-2014 | <i>Mechatronic systems modelling</i> (L, 3 ECTS + PE, from 2012,
2 ECTS), Programmes: Electrical Engineering (MSc)/ Information
and Computer Engineering (MSc) |
| 2000-2004 | Tutor at Graz University of Technology
<i>Electrical Measurement</i> (P, over 5 semesters)
<i>Computational Intelligence</i> (P, over 2 semesters) |

Education:

- Since 2013 Various training courses in the field of leadership and management
- 2004-2009 Doctoral Studies Electrical Engineering (Dr. techn., equivalent to PhD)
Graz University of Technology
Doctoral Thesis: *Development of mathematical models of a biomass grate furnace as a basis for model based control strategies*
Institute of Automation and Control
Graduation with distinction
- 1997-2003 Diploma studies in Electrical Engineering (Dipl.-Ing., equivalent to MSc)
Graz University of Technology
Branch of study: *Process automation technology*
Diploma Thesis: *Vibration analysis*
Institute of Electrical Measurement and
Measurement Signal Processing
Graduation with distinction

Other experiences:

- Since 2009 Voluntary activity for the association ZIKOMO
Association for the promotion of African students in their home countries
- 2003-2004 Community service – Society for the Promotion of Mental Health
Computer training and administrative activities
- 1996-2003 Voluntary activity as ambulance men at the Austrian Red Cross

Scientific publications and mentored theses:Selected scientific publications:

Zemann C, Deutsch M, Zlabinger S, Hofmeister G, Göllles M, Horn M. Optimal operation of residential heating systems with logwood boiler, buffer storage and solar thermal collector. *Biomass and Bioenergy*. 2020(140):105622.

Unterberger V, Muschick D, Loidl A, Poms U, Göllles M, Horn M. Model-based control of hydraulic heat distribution systems — Theory and application. *Control Engineering Practice*. 2020(101):104464.

Moser A, Muschick D, Göllles M, Nageler PJ, Schranzhofer H, Mach T et al. A MILP-based modular energy management system for urban multi-energy systems: Performance and sensitivity analysis. *Applied Energy*. 2020(261):114342.

Nigitz T, Göllles M, Aichernig C, Schneider S, Hofbauer H, Horn M. Increased economic efficiency of dual fluidized bed plants via model-based control. in 27th European Biomass Conference and Exhibition. 2019:533–538.

Nigitz T, Göllles M. A generally applicable, simple and adaptive forecasting method for the short-term heat load of consumers. In: *Applied Energy* 2019(241):73-81.

Complete lists of all scientific publications:

https://www.researchgate.net/profile/Markus_Goelles

[https://pure.tugraz.at/portal/en/persons/markus-goelles\(0e3b0fa8-08b0-4cc7-a1f1-dddd8966e687\)/publications.html](https://pure.tugraz.at/portal/en/persons/markus-goelles(0e3b0fa8-08b0-4cc7-a1f1-dddd8966e687)/publications.html)

List of all theses supervised at Graz University of Technology:

https://online.tugraz.at/tug_online/wbAbs.showMaskAbsBetreuer?pOrgNr=37&pPersNr=22949