

## Publications Carsten Wemhoener

### Peer-reviewed articles in international scientific Journals

Rominger, L., **Wemhoener, C.**, Buesser, S. 2019. Investigations of speed controlled heat pumps for NZEB in IEA HPT Annex 49, *J. Phys.: Conf. Ser.* **1343** 012078  
<https://doi.org/10.1088/1742-6596/1343/1/012078>  
[https://iopscience.iop.org/1742-6596/1343/1/012078/pdf/JPCS\\_1343\\_1\\_012078.pdf](https://iopscience.iop.org/1742-6596/1343/1/012078/pdf/JPCS_1343_1_012078.pdf)

**Wemhoener, C.**, Schwarz, R., Rominger, L. 2017. IEA HPT Annex 49 – Design and integration of heat pumps in nZEB, *Energy Procedia* Volume 122, September 2017, Pages 661-666,  
<http://www.doi.org/10.1016/j.egypro.2017.07.366>  
<https://www.sciencedirect.com/science/article/pii/S1876610217329703/pdf?md5=0dd2c58f0e1894636df546150df1457e&pid=1-s2.0-S1876610217329703-main.pdf>

**Wemhoener, C.**, Hässig, W., Wyss, S., Staubli, J. 2017. Heat pump application in nearly zero energy buildings, *Science and Technology for the Built Environment*, Vol. 23, 2017:4, 637-650,  
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**Wemhoener, C.** 2014. Heat pump for nZEB in IEA HPP Annexes 32 and 40, *REHVA Journal* 05/14, pp. 19-24, September 2014  
<https://www.rehva.eu/rehva-journal/chapter/heat-pumps-for-nzeb-in-iea-hpp-annexes-32-and-40>

**Wemhoener, C.**, Afjei, Th., Dott, R. 2008. IEA HPP Annex 28 – standardised testing and seasonal performance calculation for multifunctional heat pump systems, *Applied Thermal Engineering*, Vol. 28, Issue 16, November 2008, Pages 2062-2069  
<https://doi.org/10.1016/j.applthermaleng.2007.12.003>  
<https://www.sciencedirect.com/science/article/abs/pii/S135943110700405X>

### Peer-reviewed books and monographs

Hässig, W., Staubli, J., **Wemhöner, C.** 2018. Warmwasser-Energieverbrauch im Griff haben, Schlussbericht Studie Energie Schweiz, Uster, Dezember 2018

**Wemhöner, C.**, Schweizer, R., Schwarz, R. 2017. Entwicklung von Hybridkühldecken mit Betondeckenaktivierung, Schlussbericht KTI-Forschungsprojekt, Rapperswil, August 2017

**Wemhoener, C. (Ed.)**. 2016. Heat pumps for nearly Zero Energy Buildings, Final report IEA HPT Annex 40 part1-4, IEA Heat Pumping Technologies Technical Collaboration programme IEA TCP HPT Report No. HPP A40-1: [Project outline and summary of main results](#), ISBN 978-91-88349-80-4, <http://etkhpcorderapi.extweb.sp.se/api/file/1444>

Report No. HPP A40-2: [Case studies on building system technologies for nZEB](#), ISBN 978-91-88349-81-1, <http://etkhpcorderapi.extweb.sp.se/api/file/1335>

Report No. HPP A40-3: [Heat pump technologies developments and heat pump testing platforms](#), ISBN 978-91-88349-82-8, <http://etkhpcorderapi.extweb.sp.se/api/file/1336>

Report No. HPP A40-4: [Field monitoring projects and integration of nZEB into the energy system](#), ISBN 978-91-88349-68-2, <http://etkhpcorderapi.extweb.sp.se/api/file/1337>

**Wemhöner, C.**, Schweizer, R., Kluser, R., Afjei, Th., Müller, A. 2016. AKTIVA – Heizen und Kühlen über thermisch aktivierte Aussenflächen - Labortest und Entwicklung von integrierten Systemlösungen, Schlussbericht BFE-Forschungsprojekt, Muttenz, Rapperswil, April 2016  
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**Wemhöner, C.**, Schwarz, R., Schweizer, R., Müller, A., Afjei, Th. 2015. Operating Agent IEA HPT Annex 40, Schlussbericht BFE-Forschungsprojekt, Rapperswil, Dezember 2015

Schweizer, R., **Wemhöner, C.** 2015. Wirtschaftlichkeitsberechnung Betondeckenaktivierung, Schlussbericht Auftrag Barcol-Air AG, Rapperswil, 22. Mai 2015

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**Wemhöner, C.**, Mürmann, M. 2013. Machbarkeitsstudie Betondeckenaktivierung, Schlussbericht Auftrag MWH Barcol-Air, Rapperswil, August 2013

Bianchi, M., Muffato, L., **Wemhöner, C.**, Kunz, D. 2013. Automatisierte Energieoptimierung polyvalenter Gebäudesysteme zur benutzergerechten Klimatisierung mit minimale Energie- und Kosteneinsatz, Schlussbericht KTI-Forschungsprojekt, Fr. Sauter AG, Basel, August 2013

**Wemhoener, C. (Ed.)**. 2011. Economical heating and cooling systems for low energy houses, Final reports IEA HPT Annex 32, IEA Heat Pump Programme, IEA IA HPP

Report No. HPP A32-1: Final report IEA HPT Annex 32, Project outline and summary of main results, ISBN 978-91-86622-91-6, IEA Heat Pump Programme, IEA IA HPP

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Report No. HPP A32-2: System solution, Multifunctional heat pump systems for the application in low energy houses, Final report IEA HPT Annex 32 part 1, IEA Heat Pump Programme, IEA IA HPP

Report No. HPP A32-3: Prototype systems, Multifunctional heat pump systems for the application in low energy houses, Final report IEA HPT Annex 32 part 2, IEA Heat Pump Programme, IEA IA HPP

Report No. HPP A32-4: Field monitoring, Results of field test of heat pump systems in low energy houses, Final report IEA HPT Annex 32 part 3, IEA Heat Pump Programme, IEA IA HPP

Report No. HPP A32-5: System concepts, New developments of multifunctional heat pumps, Final report IEA HPT Annex 32, IEA Heat Pump Programme, IEA IA HPP

Report No. HPP A32-6: Best practice systems, Heat pump systems with good performance in field monitoring, Final report IEA HPT Annex 32, IEA Heat Pump Programme, IEA IA HPP

**Wemhoener, C.**, Genkinger, A., Afjei, Th. 2011. Kühlen über thermisch aktivierte Aussenflächen - Potenzialstudie, Schlussbericht BFE-Forschungsprojekt, BFE-Forschungsprogramm Gebäude, Muttenz, April 2011

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**Wemhoener, C.**, Dott, R., Afjei, Th., Huber, H., Keller, P., Helfenfinger, D., Furter, R. 2007. Calculation method for the seasonal performance factor of heat pump compact units, Final report of SFOE research programme, Muttenz, Februar 2007

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**Wemhöner, C.**, Afjei, Th. 2006. Economical heating and cooling systems, Task 1: State-of-the-Art, Country report Switzerland IEA HPP Annex 32 Task 1, Muttenz, Dezember 2006

**Wemhoener, C. (Ed.)**. 2006. Test procedure and seasonal performance calculation of residential heat pumps with combined space and domestic hot water heating, Final reports IEA HPT Annex 28, IEA Heat Pump Programme IEA Implementing Agreement HPP

Report No. HPP A28-1: Part 1: Proposal for calculation method and test procedure, ISBN 978-91-85533-30-0, <http://etkhpcorderapi.extweb.sp.se/api/file/258>

Report No. HPP A28-1: Part 2: Project documentation, ISBN 978-91-85533-30-0, <http://etkhpcorderapi.extweb.sp.se/api/file/258>

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**Wemhöner, C.** 2005. Producción más limpia en talleres y empresas de Guatemala y El Salvador, Mission Report UNIDO NCP Program (in Spanish), Muttenz, September 2005

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### **Peer-reviewed articles in international scientific conferences**

**Wemhoener, C.,** Rominger, L., Schwarz, R., Buesser, S. 2020. Evaluation of solar heat source and sink in multi-functional heat pump operation, Proceedings of 13th IEA Heat Pump Conference, Jeju, April 26-29, in print

**Wemhoener, C.,** Ochs, F., Betzold, Ch., Dentel, A. 2020. Heat pump integration for nZEB - results of IEA HPT Annex 49, Proceedings of 13th IEA Heat Pump Conference, Jeju, April 26-29, in print

Buesser, S., **Wemhoener, C.,** Rominger, L. 2020. Cost optimized design of ground probe fields with solar regeneration, Proceedings of 13th IEA Heat Pump Conference, Jeju, April 26-29, in print

Rominger, L., Clauß, J., **Wemhoener, C.,** Georges, L. 2020. Energy flexibility of capacity-controlled air-source heat pumps using rule-based control in residential nZEB, Proceedings of 13th IEA Heat Pump Conference, Jeju, April 26-29, in print

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**Wemhoener, C.,** Buesser, S., Rominger, L. 2019. Design and integration of heat pumps in nZEB in IEA HPT Annex 49, E3S Web of Conferences **111** 04007 Clima 2019, <https://doi.org/10.1051/e3sconf/201911104007>  
[https://www.e3s-conferences.org/articles/e3sconf/pdf/2019/37/e3sconf\\_clima2019\\_04007.pdf](https://www.e3s-conferences.org/articles/e3sconf/pdf/2019/37/e3sconf_clima2019_04007.pdf)

**Wemhoener, C.,** Schwarz, R. 2018. Space cooling application with unglazed solar absorber, Proceedings Eurosun 2018, Rapperswil, Sept. 2018, <https://doi.org/10.18086/eurosun2018.01.14>  
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Schwarz, R., **Wemhoener, C.** 2017. Field monitoring of a Nearly zero Energy Building, Proceedings 12th IEA Heat Pump Conference, ISBN 978-90-9030412-0, Rotterdam, May 15-18, 2017, <http://etkhpconferapi.extweb.sp.se/api/file/1657>

- Wemhoener, C.**, Schwarz, R., 2017. Heat Pump Integration and Design for nZEB, Proceedings 12th IEA Heat Pump Conference, ISBN 978-90-9030412-0, Rotterdam, May 15-18, 2017, <http://etkhpcorderapi.extweb.sp.se/api/file/1665>
- Wemhoener, C.**, Schweizer, R., Afjei, Th., Mueller, A. 2017. Activated building surfaces for space heating and cooling, Proceedings 12th IEA Heat Pump Conference, ISBN 978-90-9030412-0, Rotterdam, May 15-18, 2017, <http://etkhpcorderapi.extweb.sp.se/api/file/1715>
- Wemhoener, C.**, Schweizer, R., Schwarz, R. 2016. Results of IEA HPT Annex 40 on Heat Pumps in Nearly Zero Energy Buildings, in Heiselberg, P. K. (Ed.) CLIMA 2016 – proceedings of the 12th REHVA World Congress vol. 10, Department of Civil Engineering, Aalborg University, May 22-25, 2016, [https://vbn.aau.dk/files/233991860/paper\\_TS7\\_7.pdf](https://vbn.aau.dk/files/233991860/paper_TS7_7.pdf)
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### **Peer-reviewed articles in national scientific Conferences**

**Wemhöner, C.**, Rominger, L., Büsler, S. 2020. Netto-Nullenergiegebäude mit Wärmepumpe – Integration und Umsetzung (IEA HPT Annex 49), Tagungsband 26. Wärmepumpentagung des BFE-Forschungsprogramms, Burgdorf, 24. Juni 2020, in print

**Wemhöner, C.**, Podhradsky J., Wickart, Th., Kuster, M. 2018. Monitoring Netto-Nullenergiegebäude mit Mischnutzung, 20. Schweizerisches Statusseminar, ETH Zürich, 6./7. September 2018

**Wemhöner, C.**, Schwarz, R. 2018. Entwicklung einer integrierten Systemlösung für Kühlanwendungen in Wohn- und Verwaltungsgebäuden, 20. Schweizerisches Statusseminar, ETH Zürich, 6./7. September 2018

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Afjei, Th., Dott, R., **Wemhöner, C.**, Lederle, N. 2010. Wärmepumpen zum Heizen und Kühlen, effiziente Systemlösungen im Annex 32, Tagungsband 16. Wärmepumpentagung des BFE-Forschungsprogramms, Burgdorf, 9. Juni 2010

**Wemhöner, C.**, Afjei, Th. 2009. Internationale Zusammenarbeit im IEA HPP Annex 32 – Economical heating and cooling systems for low energy houses, Tagungsband 15. Wärmepumpentagung des BFE Forschungsprogramms, Burgdorf, 24. Juni 2009

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R. Dott, Th. Afjei, **C. Wemhöner**, Altorfer, A., Huber, A. 2006. Heizen & Kühlen mit erdgekoppelten Wärmepumpen, Tagungsband 14. Status-Seminar, ETH Zürich, 7./8. Sept. 2006

Afjei, Th., **Wemhöner C.**, Dott, R. 2004. Rechenmethode für kombinierte Wärmepumpensysteme, 13. Schweizerisches Statusseminar, ETH Zürich, 9./10. September 2004

#### **Presentations at international/national conferences/workshops**

(not covered by conference publications above)

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