

Curriculum Vitae

(Version dated 1 October 2019)



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*My Vision: Sufficient Clean Water for
Everyone*

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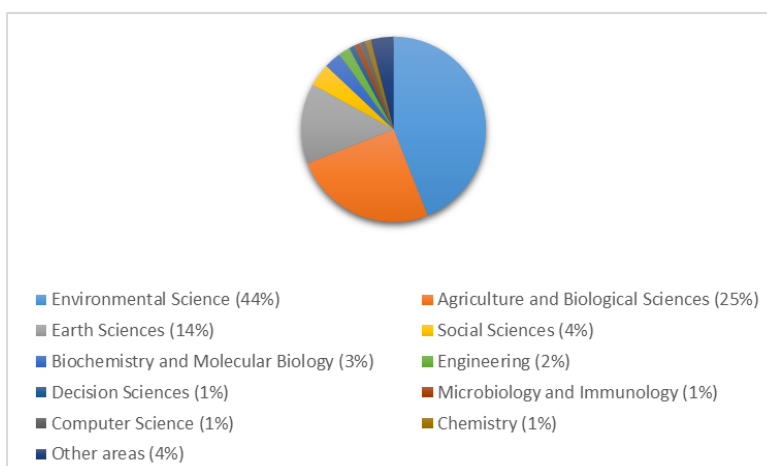
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Part 1: Summary of Research Impact

1.1. Research Impact

Miklas Scholz, cand ing, BEng (equiv), PgC, MSc, PhD, DSc, CWEM, CEnv, CSci, CEng, FHEA, FIEMA, FCIWEM, FICE, Fellow of IWA, Fellow of IETI, is Prof. in Water Resources Engineering at Lund University, Sweden. He also holds the **Chair in Civil Engineering** at The University of Salford, UK. He is a Professor and the Head of the Civil Engineering Research Group in Salford. Moreover, Miklas is a Distinguished Professor at Johannesburg University and the Central University of Technology, Free State. Prof. Scholz has shown individual excellence evidenced by world-leading publications, postgraduate supervision and research impact. His main research areas in terms of publication output are as follow: treatment wetlands, **integrated constructed wetlands (ICW)**, **sustainable flood retention basins (SFRB)**, permeable pavement systems, decision support systems, ponds and capillary suction time. About 48% each of his research is in **wastewater treatment** and **water resources management**, respectively. The remaining 4% are in capillary processes and water treatment.



Areas in Which Articles that Cited the 234 Journal Articles by Miklas Scholz Were Published (5 September 2019)



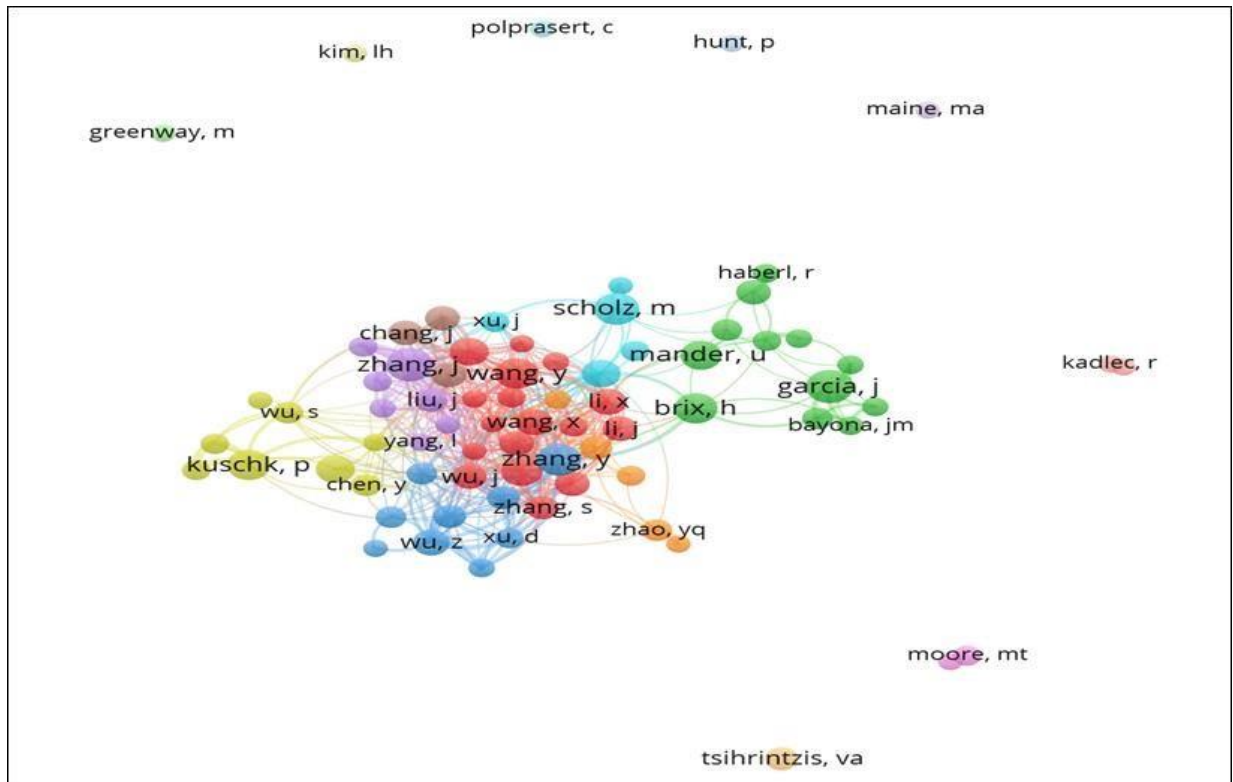
Overview of Current Research Areas and Their Corresponding Relative Importance, and Linkages Between Them

He has published four books and **237 journal articles**. Since 2009, he tops the publication list in terms of numbers for all members of staff at The University of Salford. Prof. Scholz's full journal article publications in recent years are as follows: 2009 (13), 2010 (19), 2011 (13), 2012 (21), 2013 (17), 2014 (15), 2015 (17), 2016 (13), 2017 (14) and 2018 (14). He publishes regularly in the following journals with high impact factors: *Bioresource Technology*, *Building and Environment*, *Construction and Building Materials*, *Desalination*, *Ecological Engineering*, *Environmental Modelling & Software*, *Environmental Pollution*, *Industrial & Engineering Chemistry Research*, *Journal of Chemical Technology and Biotechnology*, *Journal of Environmental Management*, *Landscape and Urban Planning*, *Science of the Total Environment* and *Water Research*. Prof. Scholz has total citations of 6149 (above 3798 citations since 2014), resulting in an **h-index of 40** and an **i10-index of 139** (2 October 2019).

Prof. Scholz's top 5 publications in terms of Google Scholar Citations (2 October 2019) are as follows:

Rank No.	Publication	Citations
1	Scholz M. and Grabowiecki P. (2007), Review of Permeable Pavement Systems. <i>Building and Environment</i> , 42 (11), 3830-3836.	422
2	Kayranli B. , Scholz M. , Mustafa A. and Hedmark Å. (2010), Carbon Storage and Fluxes Within Freshwater Wetlands: a Critical Review. <i>Wetlands</i> , 30 (1), 111-124.	370
3	Scholz M. (2006), <i>Wetland Systems to Control Urban Runoff</i> . Elsevier, Amsterdam, The Netherlands.	295
4	Scholz M. and Lee B.-H. (2005), Constructed Wetlands: A Review. <i>International Journal of Environmental Studies</i> , 62 (4), 421-447.	179
5	Lee B.-H. and Scholz M. (2007), What is the Role of <i>Phragmites australis</i> in Experimental Constructed Wetland Filters Treating Urban Runoff? <i>Ecological Engineering</i> , 29 (1), 87-95.	162

Prof. Scholz was/is an Editor, Sub-editor and Editorial Board member (no double counting) of 32, 7 and 92 journals, respectively. Miklas has a currently active income of usually SEK 4,000,000. His income over the past six years is typically SEK 15,000,000. This includes research and other grants, and consultancy.



Bibliometric Analysis of all Constructed Wetland-related Publications and Corresponding Authors with a Minimum Number of 20 Publications and 100 citations. The Map Shows 66 Authors Meeting this Criteria.

His SFRB concept assesses the multi-functionality of all large water bodies with particular reference to their flood and diffuse pollution control potential. A novel and unbiased classification system allows all stakeholders to clearly define the purpose of a water body that can be classed as an SFRB. Communication among stakeholders regarding the most appropriate management of SFRB is greatly enhanced. Moreover, the SFRB concept addresses the need to assess the flood control potential of all European water bodies as part of new legislation.

His research has led to the incorporation of findings into national and international guidelines on wetland and sustainable drainage systems. The greatest impact has been made in the area of ICW in Ireland, Northern Ireland, Scotland and England. Prof. Scholz contributed to the design guidelines of wetland systems as a research consultant.

The guidelines assist managers in all aspects of ICW planning, design, construction, maintenance and management. Moreover, specific guidelines were written for ICW used by farmers to treat farm yard runoff in Scotland and Northern Ireland, and Ireland. These guidelines are specifically mentioned in national legislation.

The guidelines on SFRB and ICW have led to the international uptake of both the SFRB and ICW concepts and the researched hybrid SuDS. This work has particularly benefited the British Isles, and Central and Northern Europe. For example, ICW are now being constructed in Belgium, Germany, the United States of America and China.

Due to water scarcity challenges around the world, Prof. Scholz thought about non-conventional water resources to address the increased demand in clean fresh water. Wastewater is seen as an easily available alternative option to overcome the shortage in water supply resulting particularly from population growth. Environmental and public health problems may result from insufficient provision of sanitation and wastewater disposal facilities. Because of this, wastewater treatment and recycling methods were identified as vital to provide sufficient fresh water in the coming decades, since water resources are limited and more than 70% of water is consumed for irrigation purposes.

Therefore, Prof. Scholz has identified the application of treated wastewater for agricultural irrigation as having much potential, especially when incorporating the reuse of nutrients like nitrogen and phosphorous, which are essential for plant production. Among the current treatment technologies applied in urban wastewater reuse for irrigation, wetlands were concluded to be the one of the most suitable ones in terms of pollutant removal and have advantages due to both low maintenance costs and required energy. Research highlighted that specific wastewater characteristics decide upon the wetland design to be used for treatment. Wetland behaviour and efficiency concerning wastewater treatment is mainly linked to macrophyte composition, substrate, hydrology, surface loading rate, influent feeding mode, microorganism availability and temperature. His research showed that constructed wetlands are very effective in removing organics and suspended solids, whereas the removal of nitrogen is relatively low, but could be improved by using a combination of various types of constructed wetlands. The removal of phosphorus is usually low, unless special media with high sorption capacity are used.

1.2. Some Views

“Most of the reviewers were convinced that you enjoy considerable international recognition for the high quality and impact of your research outputs over the review period. Your coherent contribution covers a number of related areas with the major themes being wastewater treatment and water resources management, with your research on treatment wetlands being considered as being of ‘global importance’. The reviewers were impressed by the volume of output over the review period: ‘Miklas Scholz is one of the most active and productive persons in the field of treatment wetlands and wastewater treatment research that I know. His research output numbers are impressive in terms of publications, invited keynote lectures, editorial board activities, number of PhD students supervised and so forth’. The quality of your research work was described as ‘top drawer’ and was highly commended by the reviewers: ‘Prof Scholz has a very broad understanding of civil engineering and he greatly contributes to the advancement of sustainable water management by outstanding research and a very long list of high-quality publications and postgraduate students supervised’. Another reviewer mentioned that you have a ‘genuinely multidisciplinary profile, and with great capacity of perception of what is suitable to other areas of knowledge’. ‘Miklas Scholz is very attentive to the impact factor of the journals he chooses. Apart from the impact factor, he follows an elaborate editorial policy balancing synthesis papers and papers for progress in knowledge.’ It was therefore clear to the reviewers that you have consistently published in some of the best journals in the field and that your work is well known. You contribute to the promotion of your findings by making presentations at numerous international conferences, and have a substantial track record of invitations to present papers at prestigious national and international conferences. Not surprisingly, your work is well cited. One reviewer appreciated your healthy citation indices and pointed out that your publications over the review period were cited nearly 1000 times, something described as a ‘very good result, indicating an active and productive researcher.’ It was noted that you work very well within a team (you were described as ‘highly dynamic and agile in the conduct of projects’) and also on your own. Your partnerships, especially with teams in Europe and China, were seen to be important. In terms of the impact of your work on industry and society, it was noted that your specific research achievements in constructed wetlands and sustainable drainage systems have had a real impact on wetlands management in Europe. Finally, it was mentioned that your research outputs are ‘unquestionably practical as well as erudite, and have been broadcast through symposia and workshops so the good ideas will filter down to practice.”

Feedback on research quality received by the **South African National Research Foundation**, 2019

"As a project coordinator and facilitator, Miklas is certainly at the top."

"Very engaging project coordinator; excellent activities; great team!"

"I think the meeting was well organized"

"Well organized and very good brainstorming session"

"It was nice and lovely, well-organized and very informative!"

Feedback by the **RainSolutions community** at the end of a consortium meeting in Oslo, 2019

"Yes, I always remember you as a friend. You were most hardworking and even had time for jogging all the way to city centre at midnight in middle of winter! [...] Congratulations for being a professor at very young age. You got your PhD in less than 3 years, wow!"

Paulus Amin Det, Assistant Director of Agriculture (Research), Farm Management and Station Development, **Department of Agriculture, Malaysia**, 2019

"Your CV has really impressed me."

Professor **Yonghong Wu**, State Key Laboratory of Soil and Sustainable Agriculture, and Director of Zigui Ecological Station for the Three Gorges Project, Institute of Soil Science, **Chinese Academy of Sciences**, Nanjing, China, 2018

"You are really really really superman and I cannot believe it ..."

Dr Yaqian Zhao, University College Dublin, Ireland, 2018

"That was really an outstanding & impressive CV. We are happy to welcome such an eminent person for our conference. Based on your eminence and expertise in this field, we would like to welcome you as "Keynote Speaker" for this conference."

Stella John, Program Manager, Recycling 2018, **Allied Academies**, 2017

"Very rich CV, and I would like to invite you to visit Iraq."

Dr Hassan Al-Alak, Iraqi Cultural Attaché – London, 2017

"Your CV is really impressive!"

Prof. Junguo Liu (Southern University of Science and Technology, Shenzhen, China), 2017

"Miklas has a very impressive research output, and is one of the most active researchers, I have ever met."

Dr Maria Ferentinou, Head of Department of Civil Engineering Sciences, (**University of Johannesburg**, South Africa), 2017

"impressive CV"

Associate Professor **Francesca Muzzillo (Second University of Naples, Italy)**, 2016

"I am just delighted with the expression of your resume - especially from the methodological and statistical approach to the evaluation of all the stages of your busy course of life. [...] I have consulted with colleagues, who, incidentally, are also appreciating your awards!"

Prof. Sergiy Lavrynenko (National Technical University, Ukraine), 2016

"Just wanted to send you a personal note of appreciation for the genuine shift you put in to the workshop. It was refreshing to see a positive and straightforward approach to proceedings with some "German efficiency". I personally feel the second day of the workshop would not have been as productive if not for your ideas and the way you implemented them. Our team at KSU are also thankful for how friendly and approachable you were."

Jasir Badsha, Lead - UK Projects, International Cooperation & Scientific Twinning Department (**King Saud University, Saudi-Arabia**), 2016

"Prof. Scholz is an internationally leading authority on wetlands and sustainable drainage."
Prof. **Kenneth M. Persson**, Research Manager (**Lund University**, Sweden), 2016

"Your CV is impressive; it was already very good when you had come to Skiathos in June 2007." Prof. **Kungolos Athanasios** (**Aristotle University of Thessaloniki**, Greece), 2016

"Prof. Miklas Scholz is an internationally leading authority on wetlands and sustainable drainage."
Prof. **Jesper Arvidsson**, Head of Department (**Lund University**, Sweden), 2016

"You have a very impressive record of research and wider activity."
Prof. **Bill Adams**, Moran Professor of Conservation and Development, Head of Department (**University of Cambridge**, UK), 2015

"Your CV is out of this world and exceptional."
International Research Journal of Engineering (Prudent Journals), 2015

"an exceptional CV"
Dr **Raymohan Karthikeyan**, Director, (**Scienceflora Publishers Private Ltd.**, India), 2015

"your CV is very impressive"
Prof. **Holger Schüttrumpf** (**RWTH Aachen**, Germany), 2015

"Prof. Scholz is an outstandingly successful Research Professor at Lund University with excellent subject knowledge in water resources engineering, and outstanding understanding in the areas of wetland systems and sustainable drainage. Prof. Scholz is highly enthusiastic and likes to collaborate with colleagues in the areas of integrated water resources management, climate change and groundwater. He works very well within a research team and on his own taking the lead and full responsibility in agreed areas. I know him as a very responsible and punctual team member. He has very high integrity and is a team member on which we can all rely upon. Finally, I would describe the candidate as highly dedicated, driven and full of initiative with a sense for detail and work completion. Prof. Scholz is a researcher who is unequivocally recognised by his peers as a leading international scholar in the field of wetlands for his high quality research output. The corresponding wide impact of his research goes well beyond his field of specialisation." (2017)

"we were very impressed by your CV" (2015)
Prof. **Hans Hanson** (**Lund University**, Sweden), 2015 and 2017

"Exceptional profile with many publications in high impact journals"
Prof. **Sunil Vadera** (**The University of Salford**, UK), 2015

"Your delivered material of your CV is really amazing and it took me some time to study it with interest."
Prof. **Franz Nestmann** (**Karlsruhe Institute of Technology**, Germany), 2015

"You have a very impressive CV [...] Regarding your impressive research profile [...]"
Prof. **Reinhard Hinkelmann** (**Technische Universität Berlin**, Germany), 2015

"Prof. Scholz is an outstandingly successful Research Professor at both Lund University and The University of Salford with excellent subject knowledge and understanding, particularly in the field of wetlands. [...] Miklas is highly enthusiastic and likes to collaborate with international colleagues. He works very well within a team and on his own. The candidate takes often the lead and shows full responsibility. He is very responsible and punctual. He has very high integrity and is a research team member on which I can fully rely upon. [...] Prof. Scholz is a researcher who is worldwide recognised by his peers as a leading international scholar in the field of wetlands and drainage for his high quality research output. [...] The wide

impact of his research goes well beyond his field of specialization. Prof. Scholz's research is timely, novel and cutting-edge. [...] Prof. Scholz has a substantial track record of invitations to present papers at prestigious national and international conferences. I was impressed by his list of international invitations to present papers and workshops on wetland systems. This is mirrored by the receipt of prizes and awards directly to him and his research team members. [...] There is growing evidence of significant achievements in his field through the receipt of prizes and awards. Prof. Scholz's portfolio of research grants, personal awards and industrial collaborations is impressive. In summary, Prof. Miklas Scholz has a very good broad understanding of civil engineering, and he greatly contributes to the advancement of sustainable water management by outstanding research and a very long list of high-quality publications. His research findings are internationally recognized as highly important and relevant. He deserves full recognition by your institution for his specific research achievements in constructed wetlands and sustainable drainage systems. He has clearly demonstrated a high level of excellence in research with a considerable international profile. Moreover, there is clear and obvious evidence that his research is growing rapidly in quality, volume and impact." (2017)

"Prof. Scholz's reputation is built on the internationally recognized impact of his research [...] Prof. Scholz publishes papers regularly in the top research journals in his area. [...] Prof. Scholz's research is timely, novel and cuttingedge.[...] Prof. Scholz clearly belongs to the key researchers in the fields of constructed wetlands and sustainable drainage in the world. His internationally leading research is in urban and more recently rural runoff control [...] His research findings are internationally recognized as highly important and relevant." (2016)

"Your CV is really very impressive." (2014)

Prof. **Suiliang Huang (Nankai University, China)**, 2014, 2016 and 2017

"Professor Scholz has been particularly successful at seeking out novel investigative methodologies, exploring and delivering water-vectored management methodologies. He quickly embraces new land and water engineering concepts, technologies and related areas of competence that he may not have earlier possessed, incorporating them into his field of competence and subsequently sharing these new understandings with his students and colleagues."

Dr **Rory Harrington (Government Department of Environment, Culture and Local Government, Ireland)**, 2013