

Yawar Abbas

LinkedIn: <https://www.linkedin.com/pub/yawar-abbas/15/b9b/4b6>

Yawar Abbas received his MSc degree in microsystem engineering from Department of Microsystem Engineering, IMTEK, University of Freiburg, Germany in 2011. During his master thesis he worked on the development of an active microfluidic mixer in a PDMS chip using Braille pin actuator, at Chair of MEMS application. Since December 2011 he has been working on his PhD at the BIOS group, MESA+ Institute of Nanotechnology, University of Twente, the Netherlands. The main goal of his PhD project is the in situ measurement of chloride ions in concrete structures, in collaboration with Microlab TU Delft (the Netherlands) and TPM group TU Eindhoven (the Netherlands).

EDUCATION

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|------------|---|-------------------------------|
| PhD | University of Twente, The Netherlands
BIOS-lab on a chip group
MESA+ Institute of Nanotechnology
<i>Research topic:</i> An integral in-situ chloride sensing and monitoring system for concrete structures
<i>Promoter:</i> Prof. Dr. Ir. Albert van den Berg | <i>Dec. 2011 to Present</i> |
| MS | University of Freiburg, Germany
Institute of microsystems engineering
<i>Thesis:</i> Development of an active micro mixer using an external mechanical actuator array
<i>Promoter:</i> Prof. Dr. Roland Zengerle | <i>Oct. 2009 to Nov. 2011</i> |
| BS | NED University, Pakistan
Institute of Industrial electronics engineering
<i>Thesis:</i> Industrial process automation using a programmable logic controller
<i>Promoter:</i> Dr. Ir. Ashab Mirza | <i>Jan. 2005 to Dec. 2008</i> |

RESEARCH EXPERIENCE

- **Student research assistant at HSG-IMIT** *Nov. 2010 to April 2011*
Villingen-Schwenningen, Germany
Research theme: Active micro mixers for sample preparation
- **Student research assistant at Laboratory for the Design of Microsystems, University of Freiburg, Germany** *Nov. 2009 to July 2010*
Research theme: Power management circuit for vibrational-energy-harvesting module
- **Maintenance engineer at International industries limited,** *June to Sept. 2009*
Karachi, Pakistan

TEACHING AND SUPERVISION EXPERIENCE

At the University of Twente

- **Teaching assistant**

- *Lab course:* Introduction to electrical engineering and electronics Sept. to Nov. 2013
- *Tutorials:* Introduction to electrical engineering and electronics Sept. to Nov. 2012

- **Supervision**

- *Bachelor project:*
Topic: Wireless monitoring of a potentiometric sensor reinforced concrete applications May to July 2014
This project won the best poster award at the project display event
- *Master thesis:*
Topic: Detection of chloride ion concentration based on a chronopotentiometric sensor-actuator system Jan. to Aug. 2013
Derk de Graaf (Master student) won the UT-afstudeerscriptieprijs 2013/2014 of EWI faculty
- *Bachelor thesis:*
Topic: Sensor development for corrosion monitoring of reinforcement steel March to July 2013
- *Bachelor group project:*
Topic: Measuring the activity of chloride ions Sept. to Nov. 2012

SCIENTIFIC CONTRIBUTIONS

- **Journal Publications**

- Abbas, Y., de Graaf, D. B., Olthuis, W., & van den Berg, A. (2014). No more conventional reference electrode: Transition time for determining chloride ion concentration. *Analytica chimica acta*, 821, 81-88.
- Abbas, Y., Olthuis, W., & van den Berg, A. (2013). A chronopotentiometric approach for measuring chloride ion concentration”, *Sensors and Actuators B: Chemical*, 188, 433-9.
- Abbas, Y., Miwa, J., Zengerle, R., & von Stetten, F. (2013). Active continuous-flow micro mixer using an external braille pin actuator array. *Micromachines*, 4(1), 80-89.

- **Conference contributions**

- Abbas, Y., Pargar, F., Olthuis, W., & van den Berg A. (2014). *Activated carbon as a pseudo-reference electrode for potentiometric sensing inside concrete*. In Eurosenors conference 2014, 7 - 10 Sept., Brescia, Italy.
- Abbas, Y., Nutma, J. S., Olthuis, W., & van den Berg A. (2014). *Corrosion monitoring of a reinforcement steel using galvanostatically induced potential transients*. In Ageing of Material and structures conference 2014, 26 – 28 May, Delft, The Netherlands.

- Abbas, Y., de Graaf, D.B., Bomer, J., Olthuis, W. & van den Berg, A. (2013). *Detection of chloride ion concentration based on chronopotentiometric sensor-actuator system*. In Electrochem 2013, 1 - 3 Sept. 2013, Southampton, UK. Society of chemical industry (SCI).
 - Abbas, Y., de Graaf, D.B., Olthuis, W. & van den Berg, A. (2013). *Chronopotentiometric chloride sensing using transition time measurement*. In: Faraday discussion 164: Electroanalysis at the Nanoscale, 1 - 3 July 2013, Durham. pp. 443-444. Royal Society of Chemistry. ISBN 978-1-8497369-1-6
 - Abbas, Y., Olthuis, W., & van den Berg, A. (2013, June). Detection of chloride ion concentration using chronopotentiometry. In *Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS & EUROSENSORS XXVII), 2013 Transducers & Eurosensors XXVII: The 17th International Conference on* (pp. 2037-2040). IEEE.
 - Wischke, M., Biancuzzi, G., Fehrenbach, G., Abbas, Y., & Woias, P. Vibration harvesting in railway tunnels. *Proc. Power MEMS2010*, 123-126.
- **Invited talks**
 - At the Sense of contact 16 making the world more sensitive meeting on 2nd April 2014, Soesterberg, the Netherlands. Title: Integral in-situ chloride sensing and monitoring. <http://www3.fhi.nl/senseofcontact/index.php/program/integral-in-situ-chloride-sensing-and-monitoring>
 - At the MESA+ colloquium on 8th April 2014, Enschede, the Netherlands. Title: Chloride ion sensor for concrete structures. <http://www.utwente.nl/mesaplus/scientists/downloads/abstract-yawarabbas/>
- **Other scientific events and Workshops**
 - Poster presentation at the MESA+ meeting 2012, Enschede, the Netherlands.
 - Poster presentation at the NWO studiegroep analytische scheikunde 2012, Lunteren, the Netherlands.
 - Attended the “Fundamental of Nanotechnology” workshop 3rd – 6th November 2014, MESA+ institute for nanotechnology, University of Twente, Enschede, The Netherlands.
 - Attended the Physics with industry 2014 workshop (<https://www.lorentzcenter.nl/lc/web/2014/671/info.php3?wsid=671>) 24 – 28th November 2014, Lorentz center, Leiden University, The Netherlands. *The aim of this workshop is to invite physics-related young researchers and academics to solve well-defined industrial problems. Representative from industries bring their urgent technological issues and wishes to the workshop. After a week of brainstorming, discussions and possible experiments, the researchers have to present the possible solutions in the form of presentations and technical reports.*

PROFESSIONAL AFFILIATIONS

Member of the Royal society of Chemistry
Membership no. 515479

2013 to Present

PROFESSIONAL SERVICE

- ***Conference organization***
Member of the local organizing committee
Flow14 conference 18 - 21 May 2014,
Enschede, The Netherlands
- ***Peer-Reviewed Article for:***
International journal of environmental analytical chemistry Feb. 2014