

# Anas Bsoul

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## EDUCATION

**Ph.D., Electrical & Computer Engineering - *University of British Columbia, Canada* 2018**

- Thesis: [Design, microfabrication, and characterization of a moulded PDMS/SU-8 inkjet dispenser for a lab-on-a-printer platform technology.](#)
- Advisors: Dr. Konrad Walus & Dr. Edmond Cretu.
- Grade: A+; Percentage Average: **91.5%**.

**M.Sc., Electrical & Computer Engineering - *University of British Columbia, Canada* 2011**

- Thesis: [A study of piezoresistive sensing based on carbon-nanotube forests.](#)
- Advisor: Dr. Kenichi Takahata
- Grade: A+; Percentage Average: **92.5%**.

**B.Sc., Computer Engineering – *Jordan University of Science and Technology, Jordan* 2009**

- GPA: **91%**; Class Rank: **1/76**.

## SUMMARY OF EXPERIENCE

**Assistant Professor – *Jordan Universal of Science and Technology, Jordan* 2018 – Now**

- Selected Courses: Digital Logic Design, Computer Organization, Machine Learning, Interfacing Lab
- Research Interests: Micro & Nano Fabrication, Microfluidics, 3D Printing, BioPrinting, Printable Electronics, MEMS, Machine Learning.
- Service Activities: Session and track chair in the ICICS 2019, 2020, and 2021; Master theses advisor and committee member; International advisory committee member in the ICAKMPET 2021, Scientific research and graduate studies committee member in the IT faculty and Computer Engineering Department at JUST.

**Microfluidics Research Engineer – *ASPECT Biosystems, Canada* 2018**

- Research, design, fabrication, and characterization of new microfluidic products (resulted in patents).
- Performance improvement of already existing microfluidic products.
- Development of low-cost fabrication processes.

**Research and Teaching Assistant (Ph.D. & M.Sc. studies) – *University of British Columbia, Canada* 2010 – 2018**

- Automation of micro-droplet diameter measurement as a characterization method to measure droplet-to-droplet variations in more than 50,000 droplets using stroboscopic imaging, image processing, and MATLAB. This project saved 10<sup>3</sup>'s of hours of manual work.
- Experimental setup design and building to test inkjet dispensers. This involved 3D parts printing, assembling different electronic components, stroboscopic imaging, and electric signals synchronization
- Design, fabrication, and characterization of low-cost and biocompatible inkjet dispensers.
- Integration of the inkjet dispenser within microfluidic platforms (lab-on-a-printer) for applications in biology, chemistry, and printable electronics.
- Design, fabrication, and characterization of a pressure sensor functionalized with vertically aligned multi-walled carbon-nanotube forests embedded in Parylene-C.
- Design, fabrication, and characterization of a strain gauge functionalized with vertically aligned multi-walled carbon-nanotube forests embedded in Parylene-C.
- Building custom-made two heating zones T-CVD reactor tube to synthesis carbon nanotube forests.
- Helped in teaching programming, and nanophotonic fabrication courses.

**Guest Lecturer at UBC Elder School and ECE Department – *University of British Columbia, Canada* 2017**

**RD Engineer and BI Architect – *Ciapple, Jordan* 2009**

**System Developer – *iHorizons, Jordan* 2008**

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## SELECTED NON-ACADEMIC EXPERIENCES

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| Volunteer Interpreter with UBC Refugees Health Initiative – Canada | 2017 – 2018 |
| Google Student Ambassador (1 of only 10 in the MENA) – Jordan      | 2008 – 2009 |

## ARTICLES IN NEWS

- “The Moving Forests” *IET Electronics Letters*, 47(14), 2011, p786. (featuring one of my publications)

## PATENTS

- Simon Beyer, Tamer Mohamed, **Anas Bsoul**, Sheng Pan, Sam Wadsworth, Valerio Russo, Suresha Mahadeva, Konrad Walus, Jackson He, “Systems and methods for printing a core fiber”. *US Patent App. 17/277,992*, 2021 (Pending).
- Simon Beyer, Tamer Mohamed, Konrad Walus, **Anas Bsoul**, “System for Additive Manufacturing of Three Dimensional Structures and Method for Same”. *U.S. Patent Application 14/898,036*. (this is the founding technology for ASPECT Biosystems, the 1<sup>st</sup> 3D bioprinting Canadian company)

## SELECTED PUBLICATIONS

- Zamarion, V.M., Khan, M.K., Schlesinger, M., **Bsoul, A.**, Walus, K., Hamad, W.Y. and MacLachlan, M.J., 2016. Photonic metal–polymer resin nanocomposites with chiral nematic order. *Chemical Communications*, 52(50), pp.7810-7813.
- **Bsoul, A.**, Pan, S., Cretu, E., Stoeber, B. and Walus, K., 2016. Design, microfabrication, and characterization of a moulded PDMS/SU-8 inkjet dispenser for a Lab-on-a-Printer platform technology with disposable microfluidic chip. *Lab on a Chip*, 16(17), pp.3351-3361.
- **Anas Bsoul**, Edmond Cretu, Konrad Walus, “Lab-on-a-Printer Platform Technology”. *MicroTAS 2013*, 1460:1462 (2015).
- Mostofa K. Khan, **Anas Bsoul**, Konrad Walus, Wadood Y. Hamad, Mark J. MacLachlan, “Printing Photonic Patterns in Mesoporous Chiral Nematic Resins” *Angew. Chem. Int. Ed.* 127(14): 4304-4308 (2015)
- **Anas Bsoul**, Simon Beyer, Ali Ahmadi, Boris Stoeber, Edmond Cretu, Konrad Walus, “Molded Biocompatible and Disposable PDMS/SU-8 Inkjet Dispenser”. *MicroTAS 2013*, 636:638 (2013). (Oral presentation with acceptance rate of 8.7%).
- S. Beyer, **A. Bsoul**, A. Ahmadi, K. Walus, “3D Alginate Constructs for Tissue Engineering Printed Using a Coaxial Flow Focusing Microfluidic Device”. *Transducers 2013*, 1206:1209 (2013).
- Mohamed Sultan Mohamed, Brad Bycraft, **Anas Bsoul**, Kenichi Takahata “Radio-Controlled Microactuator Based on Shape-Memory-Alloy Spiral-Coil Inductor”. *JMEMS* 22(2):331-338 (2013).
- **Anas Bsoul**, Mohamed Sultan Mohamed Ali, Alireza Nojeh, Kenichi Takahata, “Piezoresistive strain sensing using carbon nanotube forests suspended by Parylene-C membranes”. *Applied Physics Letters*, 100: 213510 (2012).
- T. Saleh, M. Dahmardeh, **A. Bsoul**, A. Nojeh, K. Takahata, “High-Precision Dry Micro-Electro-Discharge Machining of Carbon-Nanotube Forests with Ultra Low Discharge Energy”. *IEEE MEMS 2012*, 259:262 (2012).
- **A. Bsoul**, M.S. Mohamed Ali, K. Takahata, “Piezoresistive Pressure Sensor Using Vertically Aligned Carbon-Nanotube Forests”. *IET Electronics Letters*, 47: 807-808 (2011).
- Tanveer Saleh, Masoud Dahmardeh, **Anas Bsoul**, Alireza Nojeh, Kenichi Takahata, “Field emission-assisted approach to dry micro-electro-discharge machining of carbon nanotube forests”. *Journal of Applied Physics*, 110: 103305 (2011).

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## **HONORS AND AWARDS**

- Awarded a Full scholarship from Jordan University of Science and Technology to pursue the M.A.Sc and Ph.D. degrees at University of British Columbia
- Awarded the prestigious Canada national Alexander Graham Bell Canada Graduate Scholarship (NSERC CGS D)
- Awarded the University of British Columbia Four Year Fellowship (UBC FYF)
- Awarded the University of British Columbia Graduate Support Initiative (UBC GSI) multiple times
- Chancellor's Dean list award of Jordan University of Science and Technology (six times)
- Partial M.A.Sc. & Ph.D. tuition waiver fellowship award at The University of British Columbia