

Arian NOWBAHARI

Electronic Engineer

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EDUCATION

January 2023 November 2019	PhD Micro- and Nano-systems, IMS, University of South-Eastern Norway (USN) > Thesis : Low Power Circuits and Architectures for Wireless Sensor Networks (Submitted)
October 2019 September 2017	Msc Electronic Engineering, DET, Polytechnic University of Turin > Electronic Micro and Nanosystems > Thesis : Design of a Low Cost Single Gate Planar Junctionless Transistor over FD-SOI Wafer > Final Mark : 110/110
July 2017 September 2014	Bsc Electronic Engineering, DET, Polytechnic University of Turin

PUBLICATIONS

- Conference
- A. Nowbahari, L. Marchetti and M. Azadmehr, "A Delay-Based Wake-Up Receiver for Wireless Sensor Networks," 2021 International Conference on Electrical, Communication, and Computer Engineering (ICECCE), 2021, pp. 1-5, doi:10.1109/ICECCE52056.2021.9514246.
 - A. Nowbahari, L. Marchetti and M. Azadmehr, "An Ultra Low Power Multivibrator Based Wake up Receiver for Wireless Sensor Networks," 2021 IEEE 7th World Forum on Internet of Things (WF IoT), 2021, pp. 380-384, doi:10.1109/WF IoT51360.2021.9595159.
 - A. Nowbahari, L. Marchetti and M. Azadmehr, "An Oscillator Based Wake Up Receiver for Wireless Sensor Networks," 2021 IEEE Sensors Applications Symposium (SAS), 2021, pp. 1-5, doi:10.1109/SAS51076.2021.9530093.
 - A. Nowbahari, L. Marchetti and M. Azadmehr, "Nano Power Monostable Based Wake Up Mechanism for Wireless Sensor Networks," 2022 11th International Conference on Communications, Circuits and Systems (ICCCAS), 2022, pp. 187-191, doi: 10.1109/ICCCAS55266.2022.9825344
 - A. Nowbahari, L. Marchetti and M. Azadmehr, "Weak Inversion Model of an Inverting CMOS Schmitt Trigger," 2022 11th International Conference on Communications, Circuits and Systems (ICCCAS), 2022, pp. 1-5, doi: 10.1109/ICCCAS55266.2022.9824290
 - M. Azadmehr, A. Nowbahari, L. Marchetti and R. Langøy, "A Low Power Front-End for Resistive Sensors based on Switch-Cap Current Reuse," 2022 IEEE 15th Dallas Circuit And System Conference (DCAS), 2022, pp. 1-5, doi: 10.1109/DCAS53974.2022.9845572.
- Journal
- A. Nowbahari, A. Roy and L. Marchetti. "Junctionless transistors : State-of-the-art". Electronics. 2020; 9(7):1174. doi:10.3390/electronics9071174
 - A. Nowbahari, A. Roy, M. Nadeem Akram, and L. Marchetti. "Analysis of an Approximated Model for the Depletion Region Width of Planar Junctionless Transistors" Electronics. 2019; 8(12):1436. 10.3390/electronics8121436
 - A. Nowbahari, L. Marchetti, and M. Azadmehr, "Analysis of a Low Power Inverting CMOS Schmitt Trigger Operating in Weak Inversion," International Journal of Electrical and Electronic Engineering & Telecommunications, Vol. 11, No. 6, pp. 392-397, November 2022. doi: 10.18178/ijeetc.11.6.392-397
 - A. Nowbahari, L. Marchetti, and M. Azadmehr, "Subthreshold Modeling of a Tunable CMOS Schmitt Trigger," IEEE Access, February 2023. doi: 10.1109/ACCESS.2023.3241492

SKILLS

Software	Cadence Virtuoso (Schematic, Parasitic Extraction, Post-Layout), Comsol (Semiconductor Module), LTSpice, JLCPCB (PCB Design), MATLAB, C, VHDL, Assembly
Hardware	ASIC, FPGA (Altera), μ C (Arduino)
Laboratory	Electronic Equipment (e.g. Oscilloscope & Network Analyzer), Clean Room (basic training), Acoustics (Piezoelectric Transducer, Hydrophone)

WORKING EXPERIENCE

- 2023 **Researcher** at Vestfold Innovation Center (February)
2022 **Visiting Researcher** in Department of Mechanical, Aerospace, and Nuclear Engineering at Rensselaer Polytechnic Institute, NY, USA (October-December)

RESEARCH PROJECTS

- 2019 | **Device Modeling, DET, Polytechnic University of Turin**
2018 | **Workshop Innovative System** : Equivalent Circuit Modeling of a STT-MRAM (Spin-Transfer-Torque-Magnetoresistive-RAM) for Binary Neural Network. Circuit description through LTspice. Hierarchical description through MATLAB.
- 2018 | **Hardware Developer, DET, Polytechnic University of Turin**
2017 | **Ambient Intelligence Project** : Design of an *intelligent* dispenser for campus dormitories. μ C programming and signal conditioning circuit design (heat sensors, ultrasound sensors, and servomotors).
- 2016 | **Hardware Developer, DIMEAS, Polytechnic University of Turin**
2015 | **H₂O** : PCB design (schematic and layout) of a sensor board for hydrogen fuel cell car. Signal conditioning circuit design (temperature, speed, and humidity sensors). Components soldering.

CERTIFICATIONS

- 2020 **Quantus Transistor-Level T1 : Overview and Technology Setup v19.1 Exam**, issued by Cadence Design Systems
Quantus Transistor-Level T2 : Parasitic Extraction v19.1 Exam, issued by Cadence Design Systems
Physical Verification System v16.1 Exam, issued by Cadence Design Systems

GRANTS

- 2021 **HiSilicon Sponsorship Program for MPW Prototyping (IMEC)** : 6000€ grant sponsored by HiSilicon and IMEC to fabricate an ASIC in AMS 0.35 μ CMOS process through EURO PRACTICE.

PEER REVIEW EXPERIENCE

- 2021-2022 IEEE Sensors Applications Symposium (SAS) 2022 : 2 conference papers.
Journal of Applied Research and Technology : 1 journal article.
Facta Universitatis-Series Electronics and Energetics : 2 journal articles.
International Conference on Energy Engineering and Environmental Protection : 1 conference paper.

STUDENT SUPERVISION

- June 2022 | **MSc Thesis Co-supervisor, IMS, University of South-Eastern Norway**
November 2021 | > Thesis : *Design of a Parabolic Reflector for Underwater Acoustic Applications*

HONORS AND AWARDS

- 2022 **Certificate of Excellent Oral Presentation** issued by the ICCAS 22 Conference Technical Committee for presenting the following article : *A. Nowbahari, L. Marchetti and M. Azadmehr, "A Nano-Power Monostable-Based Wake-Up Mechanism for Wireless Sensor Networks"* at the 11th International Conference on Communications, Circuits and Systems (ICCCAS), Singapore, May 13-15, 2022.

VOLUNTEERING

- 2019 **Charity Painting Solo Exhibition** : 20 canvas from my collection "Chromatism from the Abyss" have been exposed at the Archeological Museum of Olbia, Italy. All the raised funds (~1k\$) were donated to *Cooperativa Sociale Villa Chiara*, a social cooperative committed to helping people with disabilities.

LANGUAGES

Italian ●●●●●
English ●●●●●
Persian ●●●●○

FORCES

- > Pragmatic
> Autonomous
> Cooperative