

Asmaa Sayed Tammam

Electronics and Communication Engineer | Analog IC Researcher

Email: asmaa.sayed@aun.edu.eg

Mobile: +20-10-2663-1890 (WhatsApp)

Webpage: [Asmaa Sayed Tammam Mostafa | Faculty of Engineering](#)

Google Scholar: <https://scholar.google.com/citations?hl=en&user=2qkdMQ4AAAAI>

Location: Assiut, Egypt



EDUCATION

2022-2026

M.Sc. in Electronics and Communication Engineering – Faculty of Engineering, Assiut University, Egypt

Thesis Title: “Design and Implementation of Wireless Power Transfer and Management Systems for Implantable Biomedical Applications in CMOS Technology”

2016-2021

B.Sc. in Electrical Engineering, excellent with honor degree – Faculty of Engineering, Assiut University, Egypt

RESEARCH INTERESTS

- Analog Integrated Circuit Design
- Wireless Power Transfer (WPT)
- Implantable Medical Devices
- RF Energy Harvesting
- Power Management ICs
- Low-Power CMOS Circuits
- DC-DC Converters

RESEARCH EXPERIENCE

Demonstrator and Research Assistant – Department of Electrical Engineering, Faculty of Engineering, Assiut University

Research Areas: Analog IC Design, Wireless Power Transfer Systems, Implantable Biomedical Devices, Power Transfer using off-shelf components for FES devices.

RF-DC Rectifier Design

- Designed a CMOS RF-DC rectifier for wireless power transfer applications.
- Improved power conversion efficiency under low RF input power.
- Performed simulations using Cadence Virtuoso.

DC-DC Boost Converter for Implantable Devices

- Designed a low-power DC-DC boost converter generating 2.4V and 1.3V outputs.
- Applied body-biasing and low-threshold-voltage techniques.
- Optimized efficiency and voltage regulation.

RESEARCH PROJECT

- **Toward Patient-Operated Electric Muscle Stimulator for Patients with Peripheral-Nerve Injuries**, funded by the Science and Technology Development Fund – STDF, Egypt.

PUBLICATIONS

[1] Shaker, Hany, **Asmaa Sayed**, Safaa Mahran, Mohamed Abbas, Kasem Khail, and Khalil Yousef. "Towards a low-cost non-invasive patient operated electric muscle stimulator for people with spinal cord injuries." In 2023 11th International Japan-Africa Conference on Electronics, Communications, and Computations (JAC-ECC), pp. 203-206. IEEE, 2023.

[2] **Tammam, Asmaa**, Mohamed Abbas, and Khalil Yousef. "An Efficient Fully Bootstrapped RF-to-DC Rectifier for Implantable Biomedical Applications in CMOS Technology." JES. Journal of Engineering Sciences 52, no. 6 (2024): 88-102.

[3] H. Shaker, **A. Tammam**, K. Yousef, K. Khalil, S. Mahran, E. Khedr, and M. Abbas, "Towards a Safe Long-Term Implantable Electrical Stimulation: A High-Efficiency Charge Balancer Design," Proceedings of 15th Vienna International Workshop on Functional Electrical Stimulation (FES) and 30 Years' IFESS Anniversary, pp. 83-86, Sept. 2025.

[4] H. Shaker, **A. Tammam**, K. Yousef, K. Khalil, S. Mahran, E. Khedr, and M. Abbas, "Cost-Effective Remotely Fully-Controlled Electrical stimulator for Skeletal Muscles Rehabilitation," Proceedings of 15th Vienna International Workshop on Functional Electrical Stimulation (FES) and 30 Years' IFESS Anniversary, pp. 75-78, Sept. 2025.

TECHNICAL SKILLS

- Cadence Virtuoso
- LTspice
- MATLAB
- HFSS
- Analog IC Design
- CMOS Circuit Design
- Wireless Power Transfer

TEACHING EXPERIENCE

Teaching Assistant / Demonstrator – Faculty of Engineering, Assiut University

Courses Assisted: Electrical Circuits, Electronics, Electronic Circuits I, Electronic Circuits II, Measurements and Instrumentation, Basic Electronics Lab, Electronic Circuits Lab, Analog Circuits, RF and Antenna Lab.

LANGUAGES

- Arabic: Native
- English: Good

Personal Information	Nationality: Egyptian Marital Status: Single	Sex: Female Religion: Muslim	DOB: 07/08/1998
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REFERENCES

- **Professor. Mohammed Abbas**

Head, Electrical Engineering Dept., Faculty of Engineering, Assiut University, Assiut 71718, Egypt.
Professor of Microelectronics, Electrical Engineering Dept., Assiut University, Assiut 71718, Egypt.

E-mail: m-abbas@aun.edu.eg

- **Professor. Khalil Ismail**

Electrical Engineering Dept., Faculty of Engineering, Assiut University, Assiut 71718, Egypt.
Professor of Microelectronics, Electrical Engineering Dept., Assiut University, Assiut 71718, Egypt.

E-mail: kyousef@aun.edu.eg