

CURRICULUM VITAE

CIVIL STATUS

Bilel GASSARA, was born on 28th of September 1980 in Sidi-Bouزيد – TUNISIA.



Nationality :	Tunisian
Marital Status:	Married
Job :	<ul style="list-style-type: none">- Assistant Professor at the National School of Electronics and Telecommunications of Sfax (ENET'COM).- Researcher: Member of Laboratory of Technology of Systems Smarts at Digital Research Center of Sfax (LT2S-CRNS).- CEO and founder of Starup HyO-Tec
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HYO-TEC FONDATION

HyO-Tec is a Tunisian technological start-up based in Sfax Technopark. It was launched as part of a research project elaborated by the Digital Research Center of Sfax and incubated by the TECHNORIAT program. We generate, convert and store renewable energies by manufacturing scalable energy storage systems, and its parts, based on the production and storage of green Hydrogen and Oxygen.

ACADEMIC QUALIFICATIONS AND TRAINING

Diploma	Institution	Mention	Date
Thesis (PhD) : Speciality : Electrical Engineering	National Engineering School of Sfax (ENIS)	Very Honourable	2010
Masters : Speciality : Electrical Engineering (Electronics - Telecommunication)	National Engineering School of Sfax (ENIS)	Very Well	2005

Engineering degree: Speciality : Electrical Engineering	National Engineering School of Sfax (ENIS)	Very Well	2004
Preparatory classes for Engineering schools Option : Physical - Chemistry (PC)	IPEI-Sfax.	Well	2002
Bachelor (math)	Secondary School of Sidi Bouzid	Well	1999

INTERNATIONAL CERTIFICATION

National Instruments: Certified LabVIEW Associate Developer CLAD

Note: *This certificate enabled the National School of Electronics and Communication of Sfax (ENET'COM) to become an official international LabVIEW academy.*

SPECIFIC TRAINING

- 2023: Immersion week at MIT, Boston: entrepreneurial ecosystem
- 2021-2023: Training on entrepreneurial skills: TECHNORIAT Program
- Training on "**LabVIEW NXG** (Next generation)" et NI academies, Beirut – Liban, Octobre 2018.
- Training on "**LabVIEW core 3**" assurée par National Instruments, Beirut – Liban, May 2016.
- Training on the design and development systems platform "LabView" (Core 1 and Core 2) provided by National Instruments at the National Engineering School of Electronics and Telecommunications of Sfax, from 02 to 6 November 2015. (**Certified LabVIEW Associate Developer CLAD**).
- Training on Parallel Programming: "Parallel Programming Workshop for Academia 3.0", Intel provided by the National Engineering School of Sfax (ENIS), December 2010.
- Pedagogic Formation in "English for Academic Purposes": "Writing, Reading research Articles, Speaking and listening in Academic Setting", ENIS 2008-2009.
- Summer School for new telecommunications technologies: "3rd RaMSiS Summer School (Radio and Mixed Signal Innovations) ", Tunis–TUNISIA, July 2007.
- Summer School for new telecommunications technologies: "2nd RaMSiS Summer School (Radio and Mixed Signal Innovations)", **Malaga – SPAIN**: July 2006.

RESEARCH ACTIVITIES

- **POST-DOC Projects:**

- Design of New PLL architecture (**SHPD PLL**) based on sample and hold phase detector without neither filter nor Inverse Sine circuit: The current work is the integrated circuit design applied on Lora WAN transceivers.
- Design of **sharing energy system**: Design of the physical layer based on Wireless Sensors Network, and the protocol layer based on distributed algorithms.

▪ **THESIS (PhD) PROJECT :**

Title: "**DESIGN OF A MULTI-BAND AND MULTI STANDARDS RECEIVER BASED ON ISPD PLL**".

Abstract :

The main subject of the proposed thesis is the design of a multi-bands sub-sampling receiver used for 4G wireless application and based on new architecture of multiband frequency synthesizer using ISPD PLL and supporting GSM/DCS/UMTS/WiMax receiver.

▪ **MASTER PROJECT :**

Title: "**DESIGN OF NEW ARCHITECTURE OF AN INVERSE SINE PHASE DETECTOR (ISPD) BASED ON A NEW MODEL IN CMOS 0.35 μ m TECHNOLOGY**".

Abstract :

The ISPD PLL is a new Phase Locked Loop without using any filters, basis of an Inverse Sine Phase Detector (ISPD). In this project, we proposed a new model of Inverse Sine function, more effective than the existing model in precision, simplicity and robustness which designed by the CMOS 0.35 μ m process technology.

▪ **Project of Engineering degree (ENIS):**

Title: "**DESIGN OF FSK DEMODULATOR BASED ON INVERSE SINE PHASE LOCKED LOOP**".

Abstract :

The ISPD PLL is a new phase locked loop architecture, without any filter and based on Inverse Sine Phase Detector).

In this project, we demonstrated the feasibility (design) of a fully integrated PLL-based on ISPD while insisting on benchmarking with demodulator based on a classical digital PLL demodulator.

PUBLICATIONS

- **Bilel Gassara**, Nouri Masmoudi, " New PLL architecture based on sample and hold phase detector without neither filter nor Inverse Sine circuit", 2016 13th International Multi-Conference on Systems, Signals & Devices (SSD), Germany, 21-24 March 2016.
- **Bilel Gassara**, Nouri Masmoudi, "Multi-Band 4G Wireless sub-sampling receiver Based on: ISPD synthesizer and New Multi band IIR Filter", JOURNAL OF TELECOMMUNICATIONS, Vol. 8, No.2, pp.18-24, May 2011.

- **Bilel Gassara**, Mahmoud Abdellaoui, Nouri Masmoudi, " 4G Wireless Receiver Architecture based on ISPD PLL Supporting GSM/DCS and WiMax", Transactions on Systems, Signals & Devices Vol. 4, No. 3, pp.351-368, 2009.
- **Bilel Gassara**, Mahmoud Abdellaoui, Nouri Masmoudi, "Multi Band Frequency Synthesizer Based on ISPD PLL with Adapted LC Tuned VCO", INTERNATIONAL JOURNAL OF ELECTRONICS, CIRCUITS AND SYSTEMS, vol.1, No. 3, pp. 150-156, 2007 ISSN 1307-4156.
- Mahmoud ABDELLAOUI, **Bilel GASSARA**, N. MASMOUDI, " A new model of an Inverse Sine Phase Detector to design ISPD PLL Demodulator without using any filters", AEUE - International Journal of Electronics and Communications, Vol.61, pp.10-21,2007.
- Mahmoud ABDELLAOUI, Nejah NASRI, **Bilel GASSARA**, Nacer KACHOURI, Mounir SAMET, Thierry VAL, "Determination of the underwater channel characteristics to improve a multiband OFDM communication", Academic journals Inc., USA, Trends in Applied Sciences Research 1, vol.5, pp.431-443, 2006, ISSN 1819-3579.

INTERNATIONALES CONFERENCES

- Maroua Ben Belgacem, **Bilel GASSARA**, Ahmed FAKHFAKH, " New approach and layers designs of sharing energy system for interconnected microgrid", 18th International conference on Sciences and Techniques of Automatic control & computer engineering (STA'2017), December 21-23, 2017, Monastir, Tunisia.
- **Bilel GASSARA**, Nouri MASMOUDI, " New PLL architecture based on sample and hold phase detector without neither filter nor Inverse Sine circuit", 13th International Multi-Conference on Systems, Signals & Devices (SSD'2016), 21-24 March 2016, Leipzig, Germany.
- **Bilel Gassara**, Nouri Masmoud, "Multi band IIR filter design used in GSM/DCS/UMTS/WLAN/WiMax subsampling receiver based on ISPD synthesizer", 11th MEDITERRANEAN MICROWAVE SYMPOSIUM (MMS'2011) Hammamet- TUNISIA, 08-10 September 2011.
- **Bilel Gassara**, Mahmoud Abdellaoui, Nouri Masmoud, "Multi Band Frequency Synthesizer Based on ISPD PLL with adapted LC Tuned VCO", CESSE, PROCEEDINGS OF WORLD ACADEMY OF SCIENCE, ENGINEERING AND TECHNOLOGY VOLUME 22. pp. 349-355, JULY 2007 ISSN 1307-6884 2007: 22 Prague, Czech Republic.
- **Bilel GASSARA**, M. ABDELLAOUI, N. MASMOUDI, "4G Wireless Receiver Architecture based on ISPD PLL Supporting GSM/DCS and WiMax" Fourth International Multi-conference on System, Signals & Devices March 19-22 2007 Hammamet Tunisia.
- **Bilel GASSARA**, Ahmed FAKHFAKH, Mahmoud ABDELLAOUI, Nouri MASMOUDI, Yannick HERVE, " Top-down hierarchical design flow application for an analogue-ISPD-PLL Demodulator design", FDL 2005, Lausanne – Suisse.
- Mahmoud ABDELLAOUI, **Bilel GASSARA**, Nouri MASMOUDI, " Integrated wide-band

FSK Demodulator Based on ISPD PLL using a new model of an Inverse Sine function circuit", NEWCAS 2005.

- **Bilel GASSARA** , M. ABDELLAOUI, N. MASMOUDI. "Nouveau modèle de la fonction trigonométrique Arcsinus(x) utilisé en PLL ISPD", SETIT 2005.
- M. ABDELLAOUI, **Bilel GASSARA** et N. MASMOUDI. "Integrated wide-band FSK DEMODULATOR based on ISPD PLL", International Conference on Microelectronic, pp. 514-517, December 2004.

PARTICIPATION IN CONFERENCES AND SEMINARS

- STA'2017: 18th International conference on Sciences and Techniques of Automatic control & computer engineering (STA'2017), December 21-23, 2017, Monastir, Tunisia.
- MMS'2011 : 11th MEDITERRANEAN MICROWAVE SYMPOSIUM (MMS'2011) Hammamet- TUNISIA, 08-10 Septembre 2011.
- National Days of Doctoral Network on Microelectronics (JNRDM 2009) : **Lyon-France**, May 2009.
- First Days of Science and Technology Graduate School of the University of Sfax, from 26 to 28 December 2008, Monastir - TUNISIA.
- SETIT: Third International Conference on Sciences of Electronic, Technologies of Information and Telecommunications: Sousse – TUNISIA: Mars 2005.
- ICM: International Conference on Microelectronic, Tunis – Tunisia: December 2004.

ORGANISATION OF SCIENTIFICS CONGRESS

- Organization of the second edition of the "NI-ENET'COM Days" and the 24h challenge "ENET'COMP'2018", April 13, 14 and 15, 2018 at the National School of Electronics and Telecommunications of Sfax, Tunisia .
- Organization of the first edition of the "NI-ENET'COM Days" and the 24h challenge "ENET'COMP'2017", 25 and 26 February 2017 at the National School of Electronics and Telecommunications of Sfax, Tunisia .
- Organization of the first "SMART GRID" days, at the Sfax Digital Research Center (CRNS), June 2018.

TEACHING

- **2012-2024:** Assistant Professor at the National Engineering School of Electronics and Telecommunications of Sfax (ENET'COM).

Materials :

- LabVIEW core 1 and core 2: Preparation to CLAD certification
- Wireless Sensors Networks

- Electronics of telecommunication (modulation – demodulation ...).
 - Electronics in High Frequency (HF).
 - Electronics and Electrical circuits.
 - Optoelectronics
 - Power circuits
 - Logic and numeric Circuits.
- **2011-2012:** Assistant Professor at National Engineering School of Gabes (ENIG).
 - **2007-2011:** Academic Assistant at National Engineering School of Gabes (ENIG).
Materials :
 - Interfacing Techniques and programmed circuits.
 - Programmed Logic Systems using VHDL.
 - **2004-2007:** Contract Teacher at the Higher Institute of Electronics and Communication of Sfax (ISECS).
Materials :
 - Lab digital modulation and optical communications.
 - Course and Practices works using transmission lines.

SUPERVISED WORKS

- **2017:** MOBIDOC Thesis Co-Supervision: Title: "Design and installation of an intelligent system of electrical energy management: Diagnosis and optimization of consumption of the MPBS production units "; theme: SMART GRID. Candidate: "Emna TRIKI" inscription in September 2017.
- **2015-2017:** Thesis Co-Supervision: Title:"Design of an intelligent network management of electric power in a multi-source, multi-consumer installation"; theme: Wireless Sensors Networks. Candidate: "Maroua BENBELGACEM" inscription in December 2016.
- **2012-2017:** Supervision of **15** "End Study Projects" for Engineers students, at National Engineering School of Electronics and Telecommunications of Sfax (ENET'COM)., topics: Wireless Sensors Networks; Programming, Industrial Computers and microcontrollers, electronics, automation.
- **2011-2012:** Supervision of tow MASTER Projects entitled:
 - "Study and implementation of fingerprint-matching algorithms". Student: "Ahmed GHORBEL", Engineer from ENIG.

- "Contribution to the evaluation of signature extraction algorithms of iris". Student: "Oumaima SLITI", Engineer from ENIG.

- **2010-2011:** Supervision of a MASTER Project entitled: "Three phase PLL design using Inverse Sine Phase Detector ". Student: "Manel MENDILI", Engineer from ENIG.
- **2007-2012:** Supervision of **26** "End Study Projects" for Engineers students, at National Engineering School of Gabes (ENIG), topics: Programming, Industrial Computers and microcontrollers, electronics, automation.
- **2005-2006:** Supervision of three "End Study Projects" for senior technician students at the Higher Institute of Electronics and Communication of Sfax (ISECS). Topic: Electronics and Telecommunication.

INDUSTRIAL ACTIVITIES

- Leader of Industrial project: "Realisation of Energy-supervision System", society: south wood panel factory, MPBS-Sfax, TUNISIA.
- Leader of Industrial project: "Design and installation of a lighting management solution", society: south wood panel factory, MPBS-Sfax, TUNISIA.

INTERNSHIP

OTHER ACTIVITIES

- Systems Design using **LabView** platform.
- **Wireless Sensors Networks** development and implementation using Jennic 51x8 motes.
- Computer Programming: C++ Language, and software simulation of electrical systems: VHDL_AMS, ORCAD, MATLAB, ADS.
- Electrical networks Installation.
- Repair of electrical systems and electronic cards.
- Web Design.

LANGUES

Arabic	Oral: Very good	Written: Very good
French	Oral: Very good	Written: Very good
English	Oral: good	Written: good
Italian	Oral: medium	Written: medium

HOBBIES

Sports and chess, association work, club activity ...