Republic of the Philippines
Mindanao State University - Iligan Institute of TechnologyCollege of Engineering and Technology
Department of Electrical Engineering and TechnologyTibanga, 9200 Iligan City, P.O. Box No.5644
Tel. Nos. (063) 221-4050 Loc.130

Summary Report on Seminars, Training, and Conferences for the Academic Year 2021-2022

In Partial Fulfillment for the Course
ECE196.1 Seminars/Colloquium

Submitted by:

JEPH MARI M. DALIGDIG

Submitted to:

ENGR. KEVIN MAGLINTE

June 2022

Table Of Contents

Page

I. 1st Webinar Series on Integrated Circuits and Devices Research In The Philippines

Date: December 09, 2021

An introduction to the Center for Integrated Circuit and Device Research was made at the beginning (CIDR). Academic institutions, industrial partners, and government agencies can all benefit from the CIDR. MSU-IIT and UP Diliman, as well as a few other high-ranking colleges in the Philippines, are involved in this project. Xinyx Design, Inc. and Analog Devices Inc. are keen to partner with these academic institutions and pool their resources in order to produce a critical mass of competent and industry standard IC designers in the Philippines. The Philippine Space Agency and other government agencies

Participating organizations include the Philippine Science and Technology Agency (PhilSA) and the DOST Advanced Science and Technology Institute (ASTI). Future seminars for academe students in the field of work they will be doing in the near future will be held by these organizations.

The webinar is based on papers published in the Philippines about integrated circuits. SSCS provided financial support for the event. Basic analog circuits, such as voltage and current references, buck-boost converters, operational amplifiers, and many more are among the issues being studied in the context of System-on-Chip implementations. DAC-ADC converters and power management units for low-power, low-voltage power harvesting are discussed in the next section. The webinar was a big success because it featured the most recent advancements in IC design.

II. Learning from the Industry Webinar

Date: August 23, 2021

The information presented at this conference was a compilation of the experiences and thoughts of industry leaders who discussed the most recent technological developments. Globalization, digitalization of markets, and vast technical possibilities are only a few of the issues discussed. We conduct business in a completely new way because of the most recent technical breakthroughs. The latest technology has had a huge impact on every sector of the economy.

The market's digitalization is a good illustration of this. Technological innovation is seen by Philippine firms as the second-largest economic opportunity, according to ILO research performed in 2017. The Philippines ranked 54th in the 2019 Global Innovation Index. In total, seven presenters from various businesses discussed how they overcame obstacles in the marketplace. The speakers at this event are Iligan Lights Inc. and Mindanao Generation (National Power Corporation).

III. Lecture Series on Microelectronics Session 2

Date: August 23, 2021

The second session of the Lecture Series on Microelectronics, which was presented by the IECEP - IBC, featured discussions on topics such the Cap-less LDO for Modern System On-Chip Design, The IC Development Flow, and Microelectronics Journey in Philippine Education. The utilization of capacitor-less low dropout regulators in the current SOC design was the topic of the first discussion that was covered in this part. In order for a normal LDO voltage regulator to have the needed transient response, power supply rejection ratio (PSRR), and stability, an external capacitor is typically required to be connected to the regulator. Because of this requirement, the size of the regulator would need to be decreased; however, this would have a negative impact on both its transient response and its power supply rejection ratio (PSRR). The Integrated Circuit Development Flow was the topic of the following conversation. It was described to them how an integrated circuit is created, beginning with the conception stage and moving on to the layout stage and finally the manufacturing stage.

In the first step of the process, the customer will specify the type of circuit and the expected parameters. After that, the design engineers will construct the circuit blocks and carry out pre-simulation testing before passing the design over to the layout engineers for the purpose of final implementation. In order to develop the layout for the schematic that was designed by the design engineer, it is the responsibility of the layout engineers to ensure that the design rule and design parameters that were provided by the foundry are aligned properly. The trip that was taken by the Philippines in the field of microelectronics was discussed by the presenter, Professor Jefferson Hora. Because of a lack of development and emphasis in the country as a whole, the promotion and expansion of the IC Design industry in the Philippines has been plagued by challenges for a good number of years.

For instance, not only is it being acknowledged and promoted by the government, but also by international research institutes, global enterprises, and rapidly growing local IC design firms. According

to what I've read, the University of the Philippines is introducing its very first class in microelectronics this semester. He spoke on the lack of resources, such as fabrication and IC design facilities, as well as a lack of competent workers, in particular students pursuing master's and doctorate degrees. He mentioned both of these problems. Since 2012, UPD Microlab has been utilizing the 65nm process technology, and now, more than a decade later, we are still utilizing the same technology node. I was moved by Sir Hora's commitment to the development of the integrated circuit design industry in the Philippines while we were having our chat with him.

IV. Online Training on SOLIDWORKS for Modeling and Simulation

Date: June 4, 2022

The Mechnical Engineering Department at MSU-IIT held a training on Solidwork on June 7, 2022. Solidwork is a computer-aided simulation for modeling projects, and its performance can be affected by simulating it with external factors. Engr. Peter A. Panorel was the main speaker, and he taught the participants the basics of solidwork. Even though they didn't show how the actual solid model was made, engineers learned a lot from the seminar. A fan case was the thing that was modeled. It is a nearly square structure with four sides that protects the fan. The training was a lot of fun, especially when the object was tested for things like weight that came from the outside. It was first put to the test at a force of 5N, and the structure showed that it could handle the force. The next simulation was done at 50N. Even so, the product can stand up to the force. In the end, it was tested with a lot of force. The product showed that it can break at a certain point and showed what part of the design is vulnerable to outside forces. It is in the thin part of the product. This is a very helpful tool, especially for Mechanical Engineers who want to test their designs before making the real prototype. It can help figure out how the design would respond to outside forces and at what point the design would still work. Some recent graduates from MSU-BS IIT's ME program showed and talked about their undergraduate thesis after the training. Engr. Frederick Irving L. Rico, one of the presenters, tested how well the barrier for motorcycles that the government put up to deal with the Covid-19 problem worked. People were very critical of it, saying that it doesn't help stop the spread of the virus. In his study, Engr. Rico looked at this. I don't think that the barrier will help stop the virus from spreading. So, Engr. Rico used solidwork software to simulate the problem, taking into account the average size of a Filipino person. The result of his aerodynamic test showed that the barrier doesn't help stop the virus from spreading. Face masks are already a good option for people traveling together. Also, adding a barrier to a motorcycle can make it more likely that the rider will

get into an accident. Engineers, especially mechanical engineers, find Solidwork software to be a very helpful tool. Solid work can also help us in the electronics field, especially in the fields of robotics and making hardware. Electronics engineers can test their designs to see if they can withstand forces in the real world that can affect their desired object. Mechanical engineering and electronics engineering work together to make new technologies.

V. SEIPI's Lean Six Sigma and Project Management Webinar

Date: March 24, 2022

As the seminar made clear, management is a very important part of our lives that helps us keep things more organized and work better. During the seminar on Lean Six Sigma and Project Management that SEIPI put on, it was stressed over and over that management is important not just for people in high-level management positions, but for everyone to help them with their daily lives. The speaker at the seminar, Trygetius De Leon, told us about a new subject called "Lean Six Sigma."

Lean and Six Sigma are two different ideas that are put together to make a management process that helps make functions and processes work better. Lean is all about getting rid of waste and figuring out what is valuable and what is not. Six Sigma is a way for a company to improve its processes by cutting down on the mistakes that can happen. It is based on Japanese ideas that the US has adopted to help their manufacturing processes and make them more competitive on the world stage. We all know that Japanese people like to work a lot. They wanted to always be at the top of their game, so they tried to get their working class to do more.

We know a lot about the iPhone 5S, which was also made in Japan. This shows that the Japanese really want their company to work as well as possible. This is what I admire most about Japanese people: that they are efficient and work hard. One of the most important things I learned at the seminar was how to tell what is valuable and what is not. It was said that a waste is any action that uses up resources without making anything of value. Sir De Leon said that wastes should be gotten rid of right away.

This is very relevant to me because I have noticed that I do things that aren't necessary, especially when I'm working on my thesis. Because I think too much, I keep doing things over and over again that don't need to be done because they don't help me reach my goals. If I had known what to do, I wouldn't have wasted time on things that didn't matter. This is what should be taken out of the way a business works. One example is how far it is to walk from one place in a company to another. Take, for example, a worker in a factory who needs

to get supplies from the supply office on a regular basis to keep the machinery running. The manufacturing process needs to be close to the source of the materials so that it takes less time to get the materials. Six Sigma's main goal is to get rid of mistakes and flaws in a process. When mistakes are taken care of, a company works at its best. In

Data-driven strategy is part of Six Sigma and is used to find management mistakes. This is part of the DMAIC process, which involves defining an opportunity, measuring performance, analyzing an opportunity, improving performance, and controlling performance. Data from the company needs to be looked at so that a Six Sigma-based management plan can be made. Most of the time, mistakes and failures happen in the first few years of a new business. So, managers must find these mistakes and chances and sum up the data so it can be analyzed.

In the things we do every day, we have to be able to see when we've done something wrong so we can fix it, learn from it, and become better people. Lean Six Sigma teaches us how to do things well. Using this management process would make our daily lives better, and when the time comes, we'd be better managers.

VI. CERTIFICATES

Republic of the Philippines
Mindanao State University – Iligan Institute of Technology
College of Engineering and Technology

in partnership with
Japan International Cooperation Agency Project for
ASEAN University Network/ Southeast Asia Engineering Education Development Network (AUN/ SEED – Net)

This

CERTIFICATE OF PARTICIPATION

is presented to

Jeph Mari M. Daligdig

for having attended the **Learning from the Industry Webinar** held on August 23, 2021 through Zoom Video Conferencing.

Carl John O. Salaan, Ph.D.
Main Coordinator
AUN/SEED – Net ASP-E for MSU-IIT 2021

Noel R. Estoperez, DOE
Dean
College of Engineering & Technology, MSU-IIT

REPUBLIC OF THE PHILIPPINES
INSTITUTE OF ELECTRONICS ENGINEERS OF THE PHILIPPINES
ILIGAN BAY CHAPTER (I-APO NO.: 27)

Certificate of Participation

is given to

Jeph Mari Daligdig

Credited with 4 CPD units

For having attended the
LECTURE SERIES ON MICROELECTRONICS SESSION 2
Held at Zoom Web Conferencing on October 30, 2021
Accreditation No.: ECE-2009-001-223

SEMINARS ATTENDED:
Cap-less LDO for Modern System On- Chip Design
The IC Development Flow
Microelectronics Journey in Philippine Education

OLGA JOY GERASTA, PECE
Governor, IECEP-IBC

JENNIBETH GATAL, ECE
Secretary, IECEP-IBC

CERTIFICATE OF PARTICIPATION

is hereby given to

Jeph Mari Daligdig

for actively participating in the "Online Training on SOLIDWORKS for Modeling and Simulation" via Zoom Meeting.

Given this 4th day of June 2022 at Mindanao State University - Iligan Institute of Technology, Andres Bonifacio Ave, Iligan City, 9200 Lanao del Norte

DR. SHERWIN A. GUIRNALDO
Research & Extension Coordinator, Department of Mechanical Engineering and Technology, College of Engineering and Technology, MSU-IIT

DR. OLGA JOY L. GERASTA
College Research & Extension Coordinator, College of Engineering and Technology, MSU-IIT

DR. ROMMEL R. VIÑA
Department Chairman, Department of Mechanical Engineering and Technology, College of Engineering and Technology, MSU-IIT

SEIPI
SEMICONDUCTOR & ELECTRONICS INDUSTRIES IN THE PHILIPPINES FOUNDATION, INC.

ASPA
ASSOCIATION OF SEIPI PEOPLE ADVOCATES
VisMin Chapter

Semiconductor and Electronics Industries in the Philippines Foundation, Inc.

presents this

Certificate of Participation

to

JEPH MARI M. DALIGDIG

MINDANAO STATE UNIVERSITY - ILIGAN INSTITUTE OF TECHNOLOGY

for attending **SEIPI's Lean Six Sigma and Project Management Webinar**
on **March 24, 2022,** via **Zoom.**

Given this **24th** of **March 2022**

DR. DANILO LACHICA
President, SEIPI

MR. TRYGETIUS DE LEON
Certified Service Lean Six Sigma Black Belt-Neville Clarke
LSS Leader and Certified LSS Instructor
LSS Corporate Steering Committee member
Onsemi Cebu

MS. DARAH GALICIA
Project Manager
Teradyne Philippines Ltd.

UNIVERSITY OF THE PHILLIPINES, DILIMAN
ELECTRICAL AND ELECTRONICS ENGINEERING INSTITUTE

awards this

Certificate of Attendance

to

Jeph Mari Daligdig
for having attended the

1ST WEBINAR SERIES ON INTEGRATED CIRCUITS AND DEVICES RESEARCH IN THE PHILIPPINES

sponsored by the IEEE Solid-State Circuits Society (SSCS) – Republic of the Philippines Section

Given this 9th day of December 2021 at the
Electrical and Electronics Engineering Institute, University of the Philippines,
Diliman. Quezon City.

Anastacia B. Alvarez, Ph.D.
Chair, Solid-State Circuits Society,
Republic of the Philippines Section

Louis P. Alarcon, Ph.D.
Program Leader, Center for Integrated Circuits
and Devices Research