

# Preface

The 1st “*Conferencia Internacional de Ciencia, Tecnología e Innovación*” (1st International Conference on Science, Technology and Innovation, CONICIETI) was successfully held on May 29-30, 2024, in Tegucigalpa, Honduras, at the Universidad Tecnológica Centroamericana (UNITEC). This inaugural event brought together a diverse community of experts and leading researchers in the fields of science, technology, and innovation. The conference provided a forum for active discussions and insightful presentations on various aspects of these emerging fields.

In this publication, we carefully compiled the high-quality peer-reviewed articles presented at CONICIETI 2024 and selected due to the comprehensive coverage of recent advancements in technology, technical systems, design, and industrial management practices. This selection focuses, in particular, on the following main topics:

1. Measurements, Sensing and Monitoring;
2. Robotics;
3. Engineering Management.

This edition will be of great use to many specialists involved in modern industrial production.

We thank all the authors, reviewers, and participants who collectively contributed to this publication and extend our special regards to the Research Department at the Universidad Tecnológica Centroamericana (UNITEC) and other partner institutions and organizations for their support of CONICIETI 2024.

We will continue our efforts to inspire researchers to contribute to the advancement of science, technology, and innovation through future editions of CONICIETI.

Regards,  
CONICIETI Organizing Committee

# Committee

## Conference Chair

Reyna Durón, Dr. MD, Universidad Tecnológica Centroamericana (UNITEC)

## Program Chairs

José Luis Ordóñez-Ávila, PhD, Universidad Tecnológica Centroamericana (UNITEC)

Manuel Cardona, PhD, Universidad Don Bosco, El Salvador

Mariela Contreras, Dr. MD, Universidad Tecnológica Centroamericana (UNITEC)

Rodolfo Rubio, MSc, Central American Research Alliance (CARA)

## Technical Committee

Alberto Alonzo, MSc, Universidad Tecnológica de Panamá

Alberto Carrasco, MSc, Algonquin College, Canada

Alicia María Reyes, MSc, Universidad Tecnológica Centroamericana (UNITEC), Honduras

Claudia Lorena Garzón Castro, PhD, Universidad de La Sabana, Colombia

Douglas Aguilar, MSc, Universidad Evangélica de El Salvador, El Salvador

Fernanda Cáceres, MSc. Universidad Tecnológica Centroamericana (UNITEC), Honduras

Héctor Moreno, PhD, Universidad de Coahuila, México

Isela Carrera Calderón, PhD, Universidad de Coahuila, México

Jorge Canales, PhD, Central New Mexico Community College, USA

Julio Valentín Fajardo, PhD, Universidad de Galileo, Guatemala

Karla Reyes, PhD, Universidad Tecnológica Centroamericana (UNITEC), Honduras

Marcelo Chacana, PhD, Universidad Santo Tomás, Chile

María Elena Perdomo, PhD, Universidad Tecnológica Centroamericana (UNITEC), Honduras

Martín Martínez-Rangel, PhD, Universidad Autónoma de Morelos, México

Roberto Chang, PhD, Universidad Nacional Autónoma de Honduras

Vilbet Briones, PhD, Universidad la Serena, Chile