

KnE Life Sciences



## Preface

## The 2019 International Conference on Biotechnology and Life Sciences (IC-BIOLIS)

Indonesia is a developing country which undergoes progressive changes towards a rapidly industrializing society. The country is characterized by its abundant natural resources and a demography dominated by parts of society at a productive age. It is a country on the verge of becoming a developed one. As with other developing countries, the shift towards the 4.0 industrial revolution demands a careful and measured management of existing opportunities and challenges. This requires human resources that are empowered with pertinent skills.

Biotechnology, which moves around the interface between technology and biological sphere, holds a key role in assisting the country in navigating its course through the new industrial revolution. It utilizes biological resources for the welfare of human society and assists the progression of a nation towards prosperity. The advancement of biotechnology, supported by skilled human resources in the sector, is essential to ensure that Indonesia is well prepared in facing both the challenges and opportunities brought about by the 4.0 industrial revolution.

By adopting a theme on "The Role of Biotechnology in the Era of 4.0 Industrial Revolution", The 2019 International Conference on Biotechnology and Life Sciences aimed to create a platform for relevant experts and stakeholders in the field of Biology and Biotechnology to discuss and share experience related to the management and appropriate utilization of biological resources, as well as the recent advancement of Biotechnology.

Held in Kemala Ballroom of Universitas Esa Unggul, Jakarta, Indonesia, on 8 and 9 October 2019, The 2019 IC-BIOLIS was attended by 118 participants representing academic, business and governmental sectors experts from Indonesia, Malaysia, UK, USA and Japan. The 2019 IC-BIOLIS hosted 47 paper presentations in the conference main programme, with additional 5 student papers presented in the side event of Youth Forum. In addition, as part of The 2019 IC-BIOLIS side event, the conference welcomed Head of Biotechnology Study Programme from all Indonesian universities to take part on the IPSBI Summit event. The conference resulted in development of joint collaboration between Indonesian and overseas universities, as well as selection of 17 papers to be included in The 2019 IC-BIOLIS Proceedings. Papers included in the proceeding were reviewed by associated experts from Japan (Hokkaido University), UK (Robert Gordon University), and Indonesia (Universitas Esa Unggul, Atma Jaya Catholic University, Universitas Surabaya, Indonesian International Institute for Life Sciences, Indonesian Institute of Sciences/LIPI, Universitas Indonesia and Universitas Jember).

Received: Month 2020 Accepted: Month 2020 Published: Month 2020

## Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the IC-BIOLIS Conference Committee.



We are grateful for the contribution of all reviewers, scientific committees and editorial boards.

The conference was organized with the special supports of Universitas Esa Unggul and Indonesia Biotechnology Programme Association (IPSBI). The committee also wish to express our gratitude for our sponsors and contributors: PT DKSH, PT Andaru Persada Mandiri, PT Indolab Utama, PT Intralab Ekatama and Penerbit Erlangga, whose support made this conference possible.

Conference date: 8 and 9 October 2019

Location: Kemala Ballroom Universitas Esa Unggul, West Jakarta, Indonesia

**Editors**: Dr. Aroem Naroeni, Dr. Marie Stefanie Dwiyanti, Dr. Henny Saraswati, Dr. Radisti A. Praptiwi, Dr. Katherine, Dr. Erlia Narulita, Dr. Anggia Prasetyoputri, Dr. Ratih Asmana Ningrum, Dr. Marlina Afriyani.

**Sponsors**: PT DKSH, PT Andaru Persada Mandiri, PT Indolab Utama, PT Intralab Ekatama, and Penerbit Erlangga.

**Organizer**: Universitas Esa Unggul and Indonesia Biotechnology Programme Association (IPSBI).

Conference website: ic-biolis.org