



## Microscopy and Microanalysis Research

- The Journal of The Microscopy Society of Thailand

Journal Home Page: <https://www.tci-thaijo.org/index.php/mmres/>

**Microsc.  
Microanal.  
Res.**

## PREFACE

*Microscopy and Microanalysis Research-The Journal of The Microscopy Society of Thailand (Microsc. Microanal. Res.)* is formerly known as *Newsletter Electron Microscopy Society of Thailand* (1984-1987), the *Journal of the Electron Microscopy Society of Thailand (JEMST Vol. 1-21, 1987-2016)* and the *Journal of Microscopy Society of Thailand (JMST Vol. 22-29, 2008-2016)*. The journal title has been changed to *Microsc. Microanal. Res.* since January 2017 (Vol. 30, No.1, January-July 2017) to get more attention from international readers and authors.

*Microsc. Microanal. Res.* publishes original research articles two volumes a year. Articles include the applications of microscopy and microanalysis to important problems in the fields of physical science and biological science. The originality and significance of the research and the quality of the microscopy or microanalysis involved are the criteria for acceptance of manuscripts.

This issue contains 10 papers in the field of Biological Science. These works were selected from those presented in the 36<sup>th</sup> International Conference of the Microscopy Society of Thailand (MST36) which was held at Rama Garden Hotel, Bangkok, Thailand, on 26-29 March 2019. The conference was co-organized by the Faculty of Science, Kasetsart University and the Microscopy Society of Thailand.

Torranin Chairuangsri  
Editor-in-chief



## Microscopy and Microanalysis Research

- The Journal of The Microscopy Society of Thailand

Journal Home Page: <https://www.tci-thaijo.org/index.php/mmres/>

**Microsc.  
Microanal.  
Res.**

## EDITORIAL BOARD

### Physical Science

Chanchana THANACHAYANONT	National Metal and Materials Technology Center	Thailand
Chris BOOTHROYD	Nanyang Technological University	Singapore
Jer-ren YANG	National Taiwan University	Taiwan
Kenji TSUDA	Tohoku University	Japan
Thapanee SARAKONSRI	Chiang Mai University	Thailand
Torranin CHAIRUANGSRI	Chiang Mai University	Thailand

### Biological Science

Chalobol WONGSAWAD	Chiang Mai University	Thailand
George W YIP	National University of Singapore	Singapore
Jong Yi CHAI	Seoul National University College of Medicine	Korea
Krai MEEMON	Mahidol University	Thailand
Suratwadee JIWAJINDA	Kasetsart University (Kamphaeng Saen Campus)	Thailand
Wisuit PRADIDARCHEEP	Srinakharinwirot University	Thailand

### Journal Managers

Sankum NUSEN	Chiang Mai University	Thailand
Nattapol LAORODPAN	Maejo University	Thailand
Yothin CHIMUPALA	Chiang Mai University	Thailand
Preeyaporn BUTBOONCHOOP	Chiang Mai University	Thailand



**Volume 32 (1)**

**January-June 2019**

## **CONTENTS**

<b>Biological Science</b>	
Endoparasitic Infection in Threadfin Bream ( <i>Nemipterus hexodon</i> and <i>N. japonicus</i> ) from Department Store in Chiang Mai Province, Thailand <i>Rattanachai Tunya and Chalobol Wongsawad</i>	1
Prevalence and Morphological Changes on Fish Gills of Cyprinoid Fish Infected with <i>Centrocestus formosanus</i> Metacercariae from Li River, Lamphun Province <i>Chalobol Wongsawad, Preeyaporn Butboonchoo, Pheravut Wongsawad, Ratchadaporn Kuntatum and Nareerat Chaiwang</i>	7
Prevalence of <i>Haplorchoides</i> sp. Metacercariae and Comparative Morphology of Infected and Uninfected Scales in Cyprinoid fishes from Li River, Lamphun Province <i>Preeyaporn Butboonchoo and Chalobol Wongsawad</i>	12
Differences in Radular Morphology in Relation to Microhabitat of Assassin Snails <i>Anentome Helena</i> from Northern Thailand (Mollusca: Gastropoda) <i>Nithinan Chomchoei and Nattawadee Nantarat</i>	18
Histopathology of Mekong Giant Catfish ( <i>Pangasianodon gigas</i> ) Infected with Columnaris Bacteria in Chiang Mai Province, Thailand <i>W. Maneepitaksanti, W. Tapingkae, T. Moonmanee and K. Gatphayak</i>	23
Histology study of Siamese freshwater batfish ( <i>Oreoglanis siamensis</i> ) <i>Wasin Srirattanasart, Worawit Maneepitaksanti, Rung Hiranwong and Sakuldech Nunta</i>	26
Character and Property Evaluation of Sacred Figure Tree ( <i>Ficus religiosa</i> L.: Moraceae) Wood <i>Piyanan Thanomchat, Yupadee Paopun and Prasart Kermanee</i>	30
Microscopic Analysis of the Pollen Morphology of Some <i>Garcinia</i> Species <i>Valerie W. Suwanseree, Salak Phansiri, Yupadee Paopun and Chinawat Yapwattanaphun</i>	34
Techniques for Preparing Fragile Pollen of <i>Curcuma supraneeana</i> W.J. Kress & K.Larsen Škornick. for Morphological Observations <i>Yupadee Paopun, Piyanan Thanomchat, Dararat Changjan and Rommanee Charoensub</i>	41