

JASTIP WP3 biodiversity and bioresources study toward synergy of ASEAN countries and Japan for sustainable development

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Japan-ASEAN Science, Technology and Innovation Platform (JASTIP)

Kyoto university launched JASTIP project (2015-2020)

1. Implementation of advanced international **joint research**
2. Promotion of **societal implementation** of research results
3. Fostering **human resources**

JASTIP Head Office Kyoto Univ. ASEAN Center (Bangkok)



WP1

Joint Laboratories for Joint Research

Environment · Energy

National Science and Technology Development Agency (Thailand) (NSTDA)



WP2

Bio-resources · Biodiversity

Indonesian Institute of Sciences (LIPI)



WP3

Disaster Prevention

Malaysia-Japan International Institute of Technology (MJIIT)



WP4

JASTIP Joint labo



RC Biomaterials



- Autoclave Class N Sterilization
- Bio Safety Cabinet Class II Type A2
- Multi-Stack Reciprocating Shaker
- Incubator digital
- Refrigerated centrifuge 5424
- 4 x 8-tube PCR strip rotor, include Lids
- Rotary evaporator IKA RV10 Digital V



JASTIP Joint labo

RC Biology



Research Topics in WP3

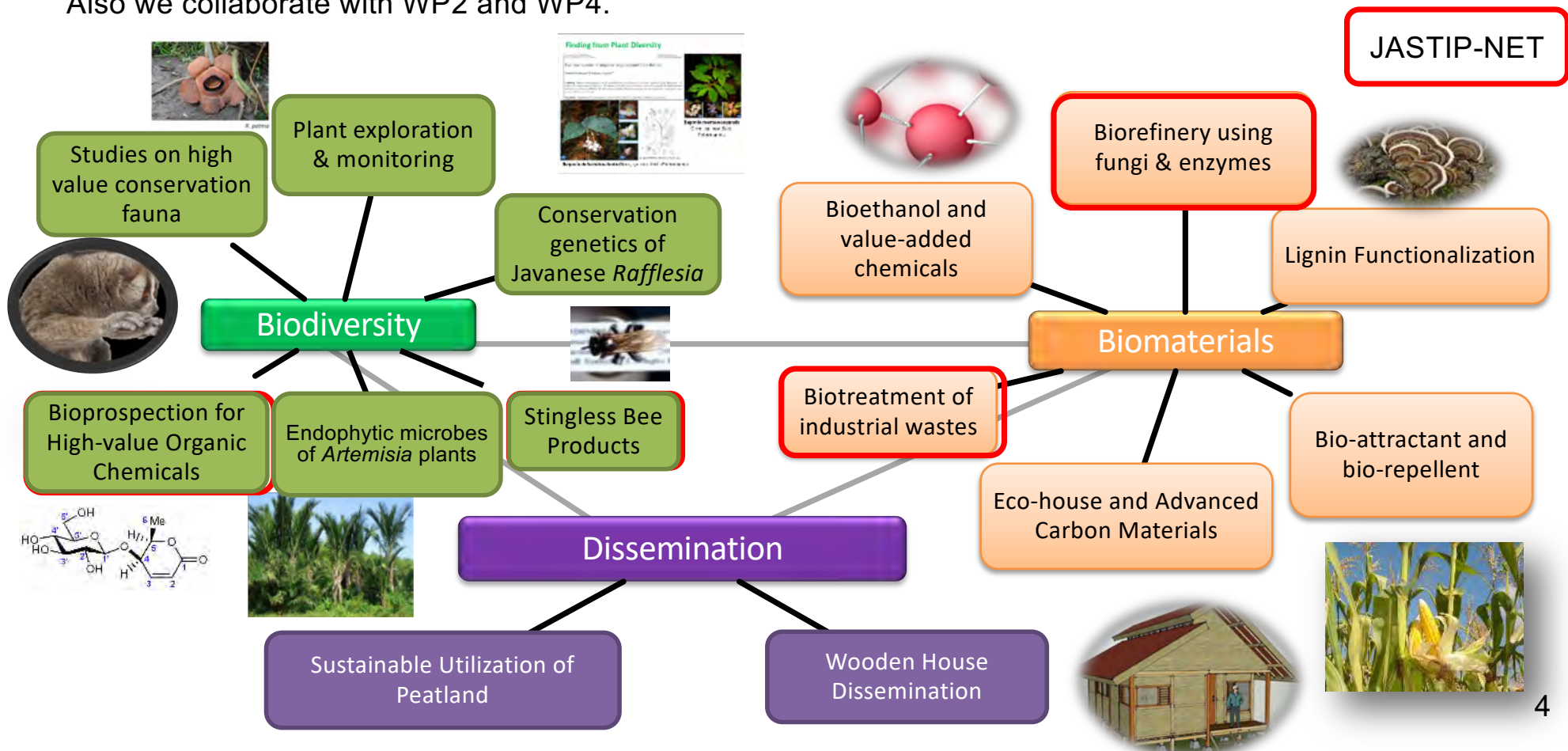
Biodiversity cluster focuses on the biodiversity exploration/prospection, monitoring, and conservation.

Biomaterials cluster focuses on the development of innovative utilization of biomaterials and biodiversity.

Dissemination cluster focuses on the utilization and diffusion of innovative technology to the society.

These three clusters are flexibly collaborate each other and also collaborate with WP3 platform institutions.

Also we collaborate with WP2 and WP4.



Biodiversity Studies in 2018

- Biological resource research based on ownership of the bio-diversity
- Strengthening of the biological diversity information database and depository

1. Analysis of the mitochondrial sequences for species identification and evolutionary study of slow loris (genus *Nycticebus*)

Gono Semiadi, Wirdateti, Hiroyuki Tanaka (PRI, KU)

2. Conservation genetics of Javanese *Rafflesia*

Yayan Kusuma, Yuji Isagi (KU)

3. Plant exploration & monitoring

Ruliyana Susanti, Yukako Monda, Mamoru Kanzaki (KU)

4. Bioprospecting of endophytic microbes of *Artemisia* plants

Andria Augusta, Shoji Maehara (Fukuyama Univ.)



R. patma



Finding from Plant Diversity

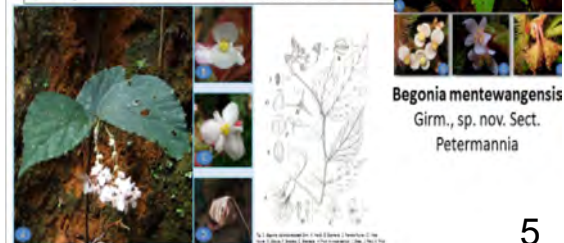
DOI: 10.15472/1155-8844.20180404

Two new species of *Begonia* (Begoniaceae) from Borneo

Deden Girmansyah¹ & Ruliyana Susanti^{1,2}

Summary: *Begonia mentewangensis* and *B. dolichobracteata* from Borneo, are newly described and illustrated. The habit of *B. mentewangensis* is similar to *B. andersonii*, while the fruit is similar to that of *B. patma*. *B. dolichobracteata* with reflexed leaves, is allied to *B. subulata* from Sabah. Distribution maps, herbarium and conservation status are provided for each genus.

Key Words: Begoniaceae, Pteromalidae, Conservation, Sabah, Indonesia



Begonia mentewangensis
Girm., sp. nov. Sect.
Petermannia

Begonia dolichobracteata Girm., sp. nov. Sect. Petermannia

Studies on high value conservation fauna

1. Analysis of the mitochondrial sequences for species identification and evolutionary study of slow loris (genus *Nycticebus*)

Wirdateti (LIPI) and Dr. Tanaka Hiroyuki (PRI, KU) coinducted collaborative research using PRI budget.

JASTIP additionally supported it. Analysis of slow lorries species (*Nycticebus coucang* from Sumatra, *N.javanicus* from Java, and *N. menagensis* from Kalimantan).



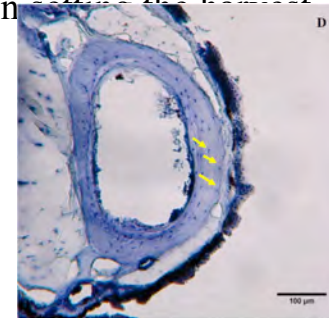
2. Animal Hair morphology for the identification of species

Hairs of four spp. of Suidae and four spp. of Cervidae were anatomically studied for the identification of species in the field



3. Age determination using skeletochronology for exporting frogs

Skeletochronology is a method of determining age by calculating the number of Line Arrested Growth (LAG) in the cross-section of bone. In this study, age determination of frozen frogs that is ready for export was calculated to obtain an indicative result of the harvest age. The result will be a portion of Indonesian CITES policy in setting the harvest quota.



Ni Luh Putu Rischa Phadmacanty, Amir Hamidy, Gono Semiadi. 2018. On Skeletochronology of Asian grass frog *Fejervarya limnocharis* (Gravenhorst, 1829) from Java to support management conservation. *Treubia* 2018 45: 1-10; <http://dx.doi.org/10.14203/treubia.v45i0.3109>

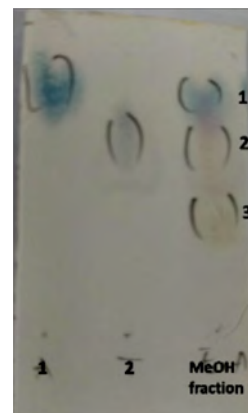
Bioprospecting of plant resources in ASEAN countries to produce highly value-added products

JASTIP-NET

Andria Agusta; Hiroshi Kamitakahara; Wichan Eiadthong; Shoji Maehara; Khin Than Shin; Praptiwi; Dewi Wulansari; Ahmad Fathoni; Kartika Dyah Palupi, Evana, Listiana Oktaviani.

The isolation and identification of chemical constituents of *Rennellia* spp. collected in the ASEAN Region

Target material in FY2018 was the root bark of *R. elliptica*.



Yellow Ginseng

TLC chromatogram of compound 1, 2, and methanolic fraction of *R. elliptica*.

One compound (1) has been analyzed for $^1\text{H-NMR}$, and need further analysis by 2D-NMR techniques to elucidate their chemical structure.

Publication from past activities

1. Kamitakahara H, et al. 2019. Two-dimensional NMR analysis of *Angiopteris evecta* rhizome and improved extraction method for angiopteraside. *Phytochem Anal.* 2019 Jan;30(1):95-100. doi: 10.1002/pca.2794
2. Praptiwi et al. 2018. Acute Oral Toxicity Study of Root Bark Extract of Yellow Ginseng (*Rennellia elliptica* Korth.) in Mice. *Proceeding of International Symposium on Bioeconomics of Natural Resources Utilization.* Center for Plant Conservation Botanic Garden LIPI. October 2018. P. 260-266.

Bioprospecting of endophytic microbes of *Artemisia* plants

Andria Agusta; Shoji Maehara; Ahmad Fathoni; Hiroshi Kamitakahara; Praptiwi; Dewi Wulansari; Kartika Dyah Palupi, Evana, Listiana Oktaviani.

Isolated endophytic fungi from *Artemisia* spp.

No	Code	Sample	Host Plant	Plant Parts	Region
1	1	BTAvCw-1	<i>A. vulgaris</i>	Stems	Ciwidek, West Java
2	2	BTAvCw-2	<i>A. vulgaris</i>	Stems	Ciwidek, West Java
3	3	BTAvCw-3	<i>A. vulgaris</i>	Stems	Ciwidek, West Java
4	4	BTAvCw-4	<i>A. vulgaris</i>	Stems	Ciwidek, West Java
5	5	BTAvCw-5	<i>A. vulgaris</i>	Stems	Ciwidek, West Java
6	6	AKAvCw-1	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
7	7	AKAvCw-2	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
8	8	DnAvCw-1	<i>A. vulgaris</i>	Leaves	Ciwidek, West Java
9	9	DnAvCw-2	<i>A. vulgaris</i>	Leaves	Ciwidek, West Java
10	10	TdAvCw-2	<i>A. vulgaris</i>	Petioles	Ciwidek, West Java
11	11	AKAvCw-3	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
12	12	AKAvCw-4	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
13	13	TdAvCw-1	<i>A. vulgaris</i>	Petioles	Ciwidek, West Java
14	14	AKAvCw-5	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
15	15	AKAvCw-6	<i>A. vulgaris</i>	Roots	Ciwidek, West Java
16	17	BTAAcb-1	<i>A. annua</i>	Stems	Cibodas, West Java
17	18	BTAAcb-2	<i>A. annua</i>	Stems	Cibodas, West Java
18	19	DnAAcb-1	<i>A. annua</i>	Leaves	Cibodas, West Java
19	20	AKAAcb-3	<i>A. annua</i>	Roots	Cibodas, West Java
20	21	BTAvCb-1	<i>A. vulgaris</i>	Stems	Cibodas, West Java
21	22	BTAvCb-2	<i>A. vulgaris</i>	Stems	Cibodas, West Java
22	23	BTAvCb-3	<i>A. vulgaris</i>	Stems	Cibodas, West Java
23	24	BTAvCb-7	<i>A. vulgaris</i>	Stems	Cibodas, West Java
24	25	BTAvCb-8	<i>A. vulgaris</i>	Stems	Cibodas, West Java
25	26	TdAvCb-2	<i>A. vulgaris</i>	Petioles	Cibodas, West Java

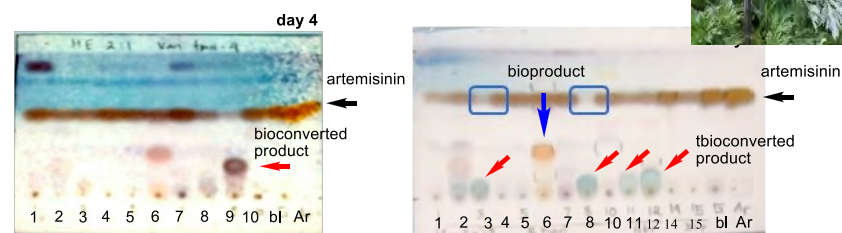
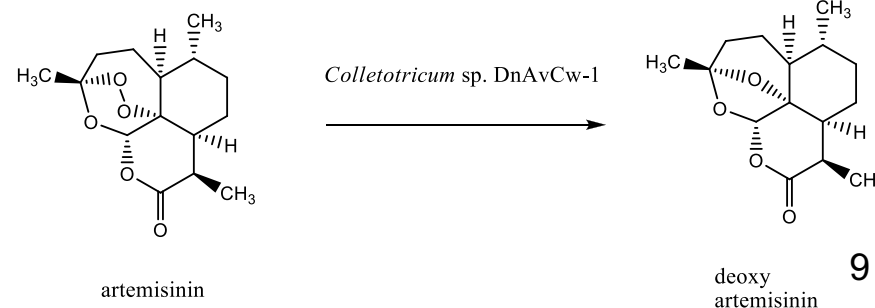


Fig. 2. The TLC analysis of bioconversion reaction of artemisinin by the endophytic fungi isolated from the plant of *A. vulgaris*. (no. 8 is DnAvCw-1, and no 9 is DnAvCw-2).

Bio converted product of artemisinin by the endophytic fungus *Colletotricum* sp. DnAvCw-1; a deoxy artemisinin derivative



Artemisinin: Drug used against malaria

Publication from past activities

Shoji Maehara, Andria Agusta, Yoshimi Tokunaga, Hirotaka Shibuya and Toshiyuki Hata, in press, Endophyte composition and *Cinchona* alkaloid production abilities of *Cinchona ledgeriana* cultivated in Japan, *Journal of Natural Medicines*, <https://doi.org/10.1007/s11418-018-1273-z>

STINGLESS BEE PRODUCTS FROM EAST KALIMANTAN FOREST FOR FOOD AND MEDICINE

Enos Tangke Arung¹, Syafrizal¹, Irawan Wijaya Kusuma¹, Rico Ramadhan², and Kuniyoshi Shimizu³

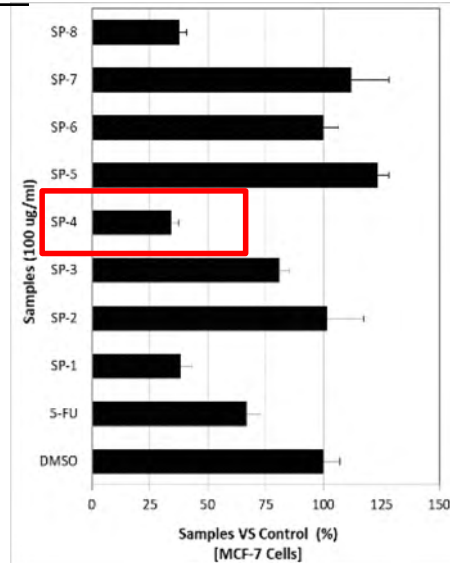
JASTIP-NET

1. Mulawarman University, Samarinda, Indonesia; 2. Chulalongkorn University, Bangkok, Thailand; 3. Kyushu University, Fukuoka, Japan

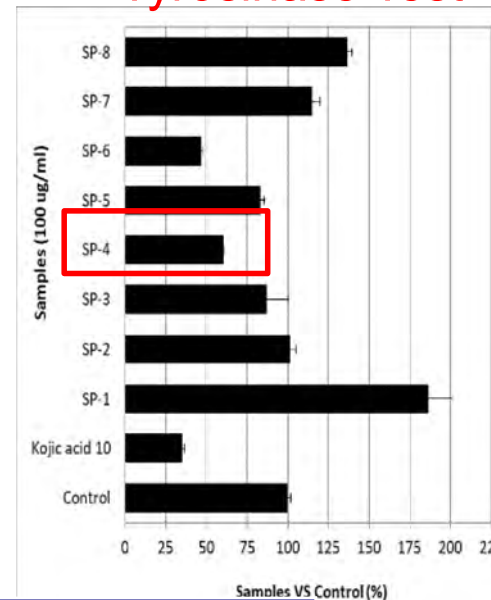
Biological activities

Antioxidant, antityrosinase, antimelanin, antiacne, antidiabetic, antimicrobial activities

Anti-Cancer Test



Tyrosinase Test



No	Stingless Bee Species
1	<i>Tetragonula laeviceps</i> (Smith, 1857)
2	<i>Heterotrigona itama</i> (Cockerell, 1918)
3	<i>Heterotrigona bakeri</i> (Cockerell, 1919)
4	<i>Tetragonula iridipennis</i> (Smith, 1854)
5	<i>Tetragonula sapiens</i> (Cockerell, 1911)
6	<i>Tetragonula testaceitarsis</i> (Cameron, 1901)
7	<i>Tetragonula fuscobalteata</i> (Cameron, 1908)
8	<i>Homotrigona fimbriata</i> (Smith, 1857)

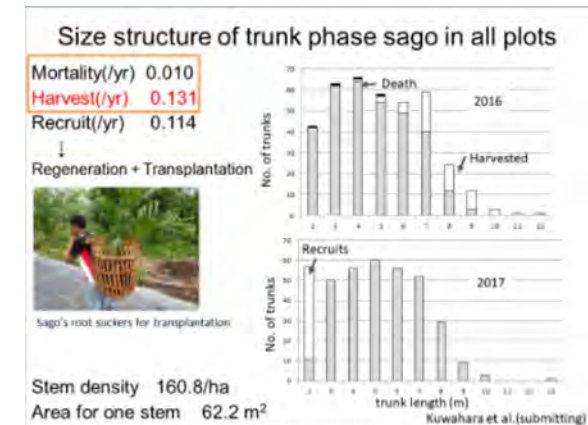


Workshop in church society 10 in Samarinda

Studies on Peatswamp ecosystem studies in Indonesia and Malaysia

Ruliyana Susanti, Yukako Monda, Mamoru Kanzaki, Ahmad Muhammad, Shigeo Aoki, Shuzo Kuwahara, Takayuki Kaneko

1. The population dynamics and productivity of sago palm in Riau, Indonesia Toward the sustainable peatland use



2. Ecology of hollow stem in peat swamp forests in Sarawak, Malaysia Clarifying peat ecosystem

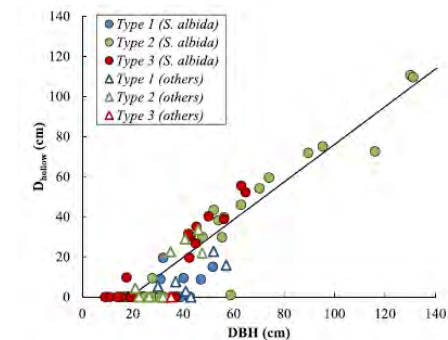


Fig. 3 Hollow diameter at breast height (D_{hollow}) versus diameter at breast height (DBH) of *S. albida* and other species growing in the three different forest types. Linear regressions that excluded solid trees ($D_{\text{hollow}} = 0$ cm) were significant (solid line; $R^2=0.832$, $F_{1,39} = 193.6$, $P < 0.001$, $n = 41$) (forest types as defined in Fig. 2)

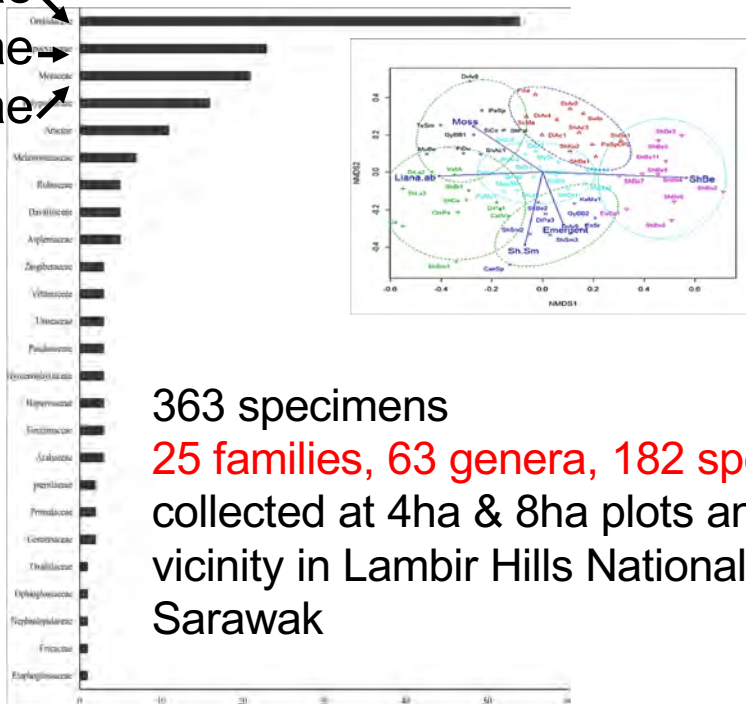
Publication from past activities

Yukako Monda¹ · Yoshiyuki Kiyono² · Auldry Chaddy³ · Christopher Damian³ · Lulie Melling 2018. Association of growth and hollow stem development in *Shorea albida* trees in a tropical peat swamp forest in Sarawak, Malaysia. *Trees* (2018) 32:1357–1364. <https://doi.org/10.1007/s00468-018-1717-9>

Plant Exploration & Monitoring on Canopies

1. Floristic Composition and Habitat Segregation of Vascular Epiphytes in a Bornean Lowland Tropical Forest Biodiversity Survey for Epiphytes

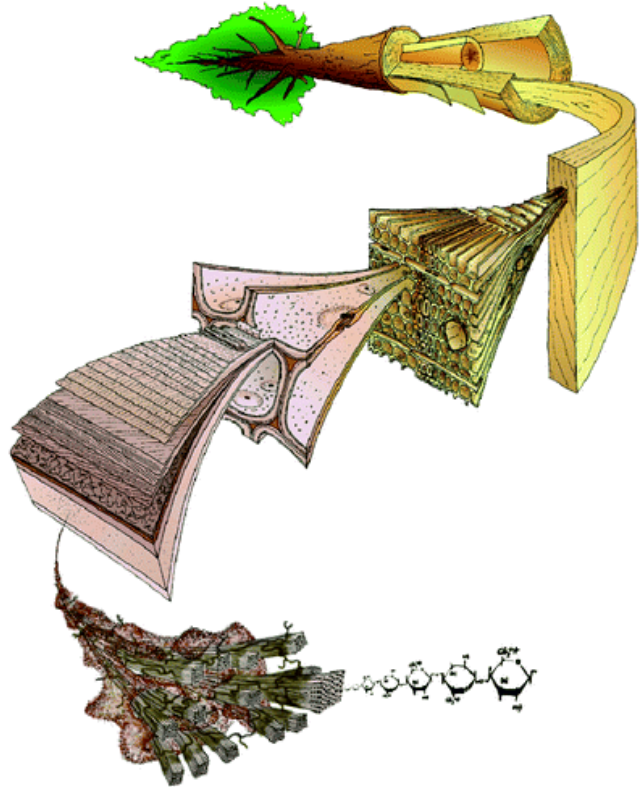
Orchidaceae
Apocynaceae
Moraceae



Publication from past activities

Yukako Monda¹ · Yoshiyuki Kiyono² · Auldry Chaddy³ · Christopher Damian³ · Lulie Melling² 2018.
Association of growth and hollow stem development in *Shorea albida* trees in a tropical peat swamp
forest in Sarawak, Malaysia. *Trees* (2018) 32:1357–1364. <https://doi.org/10.1007/s00468-018-1717-9> 12

Bioresource Utilization: Creation of maximum values from the assembled structures of biomass



Bioresources

Macrostructure

Microstructure

Nanostructure

Molecules

Energy

Keywords

Screening of useful

- **Plant**
- **Microorganism**

Wood architecture with high safety and low cost

New wood and bamboo materials

Lignin grafting synthetic polymer

New carbon materials

Cellulose nanofibers

Aromatic chemicals

Bioactive compounds

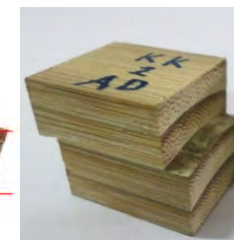
Bioethanol Cellulase

Pyrolysis

Screening and Characterization Tropical Wood and Bamboo Species for Economical Utilization

Wahyu Dwianto, M.Agr.*, Danang Sudarwoko Adi, Teguh Darmawan, Eka Lestari, Adik Bahanawan, Dwi Ajas Pramasari, Darmawan, T., W. Dwianto, LIPI Junji Sugiyama*, Kyoto Univ. and Takuro Mori, Hiroshima Univ.

- Identification and Characterization of Wood Species from **Sumba and Simeuleu Island**
- Density Prediction Model of **Fast Growing Platinum Teak Wood** Using NIR-Partial Least Squares Regression
- **Natural Durability test** of Fast Growing Teak Wood
- Performance of **Bamboo Lamination** as Construction Materials
- Development of Curve Shape Cross-section Bamboo Lamination



Development of Integrated Technology between Wind Turbines and Electric Wooden Bikes for Free-car Areas –

Wahyu Dwianto¹, Didi Diarsa Adiana², Fauzan Azhiman³, Teguh Darmawan¹, and Jayadi¹

¹RC for Biomaterials, LIPI; ²Core Margonda Creative Comm. Hub; ³PT. Sinergi Nanotech Indonesia

This idea is one of end products of JASTIP Collaboration Research on **Searching and Characterization of Economically Potential Utilizations of Tropical Wood Species**; with Prof. J. Sugiyama, RISH – Kyoto University.

Wind Turbines Technology has been developed since 2015 as a collaboration activity among **A-Wing Ltd. Co., Japan** as a patent holding of wind turbine generator, **Innovation Center** and **Research Center for Biomaterial LIPI**.

In this collaboration, **Research Center for Biomaterial LIPI** has a **responsibility to substitute wind turbine's blades with local wood species**. In the other hand, PT. Sinergi Nanotech Indonesia company has responsible to install the wind turbine system.

This wind turbine is now combined with solar cell.



Electric wooden bicycles and a wind turbine as its battery charger

Electric Wooden Bikes

WIND TURBINE

Turbin Hybrid NTE-E1000T

High Durable Wood Structure and Low Cost Wooden House

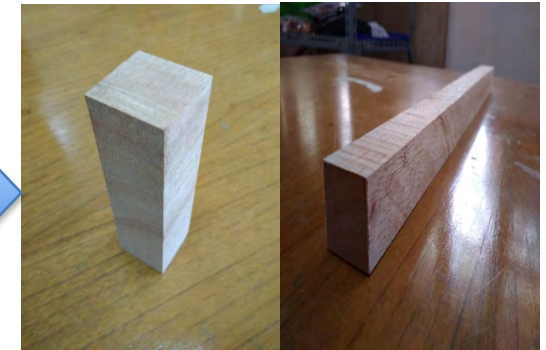
Agung Sumarno*, Eko Widodo *, Ananto Nugroho *, Triastuti *, Subyakto *, Takuro Mori**

*)Research Center for Biomaterials-Indonesian Institute of Sciences, Indonesia

**Hiroshima University, Japan

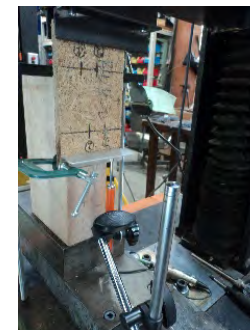
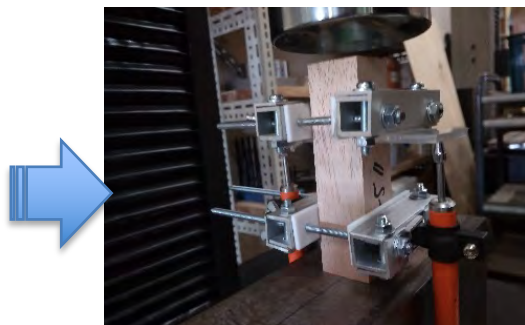
This research develop fast growing wood in Indonesia as an antervative materials for high durable wood structure and low cost wooden house

Platinum Teak (*Tectona grandis*) Jabon (*Antocephalus cadamba*)



Fast Growing Wood

Sample Preparation



Testing mechanical strength

Development of environmentally friendly wood-based composites using lignocellulose and natural adhesives

Subyakto, Kenji Umemura et al.

To develop particleboard using **bamboo, waste of corn and citric acid adhesive.**



Bamboo or corn particles



Mixing with Citric Acid



Oven drying 80°C, 15 h



Mat forming



Hot pressing



Particleboard

Development of Advanced Composite Products Using Wood Charcoal

Toshimitsu Hata, Joko Sulisty, Subyakto, et al.

Wood charcoal is made from several Indonesian fast growing and community forest wood species, and agricultural wastes.



Jabon (*Anthocephalus cadamba* Miq.)



Rambutan (*Nephelium laapaceum*)



Platinum - Teak wood
(*Tectona grandis*), LIPI



Candlenut shell (*Aleurites moluccana*) #Kemiri

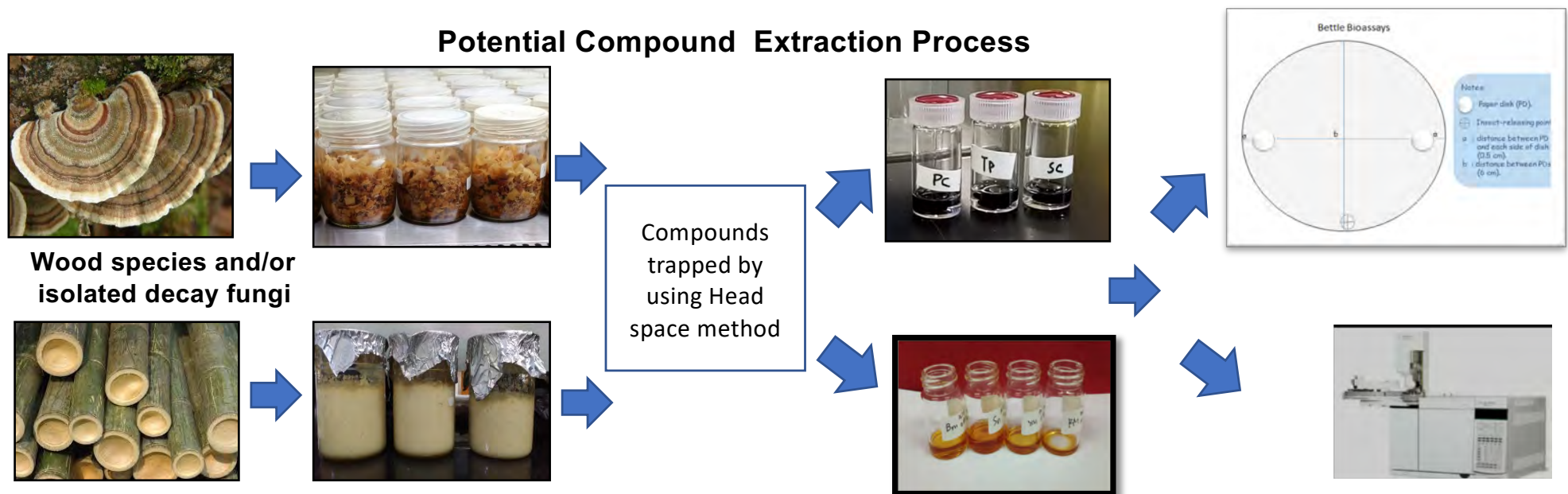
- Preparation of Charcoal:
Carbonization temperatures: 600-900 °C
- Characterisation of Charcoal:
 - Morphological and crystalline properties of charcoal (SEM and XRD)
 - Chemicals and other properties (thermal properties, calorific values, etc.)
- Product Development:
 - Fire retardant material
 - Fuel Cell
 - Others

Development of plants and wood decayed fungi for bio-attractants in wood-attacking insect

Titik Kartika *, Sulaeman Yusuf*, Khoirul Himmi Setiawan*, Maya Ismayati *, Deni Zulfiana*, Apriwi Zulfritri *, Anis Sri Lestari*, Anugerah Fajar*, Ni Putu Ratna Ayu Krishanti*, Bramantyo Wikantyo*, Tsuyoshi Yoshimura**, Aya Yanagawa**, Nobuhiro Shimizu***

*Research Center for Biomaterials LIPI, **RISH, Kyoto University, ***Kyoto Gakuen University

Natural attractant from bioresources, fungal and plant sources → detected by insects as chemical signals via sense of organs → being developed for insect bait



Publications:

- Directional Response of the Subterranean Termite *Coptotermes gestroii* toward Volatilized *Pinus merkusii* Extract: Presented in International Symposium for Sustainable Humanosphere, 18 October 2018, Medan, North Sumatera, Indonesia
 - Detection of Potential Compound Derived from Wood Decay Fungi for Bio-attractant in Managing Wood-attacking Insects: Presented in JASTIP Symposium, 1 November 2018, Serpong, West Java, Indonesia

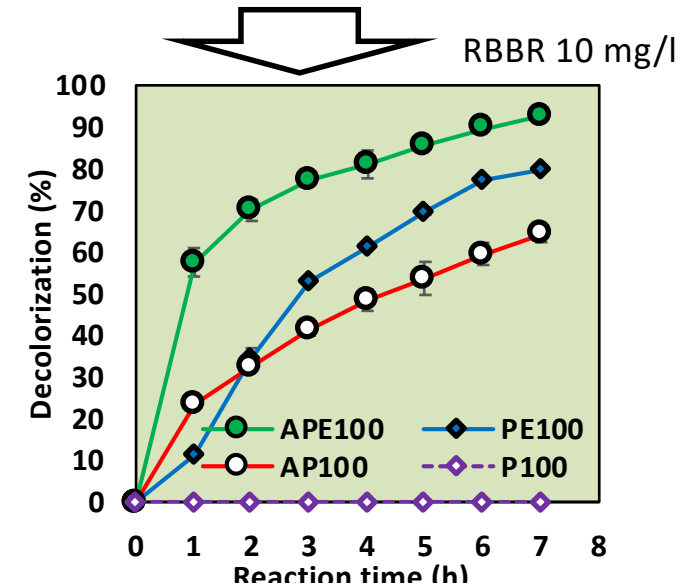
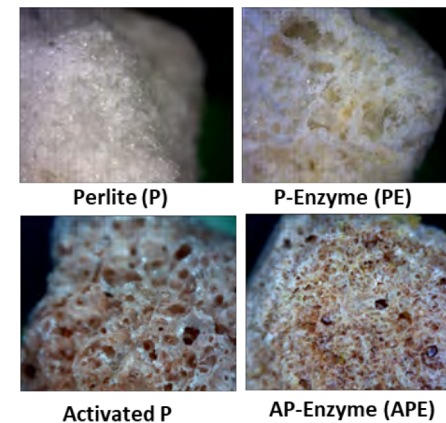
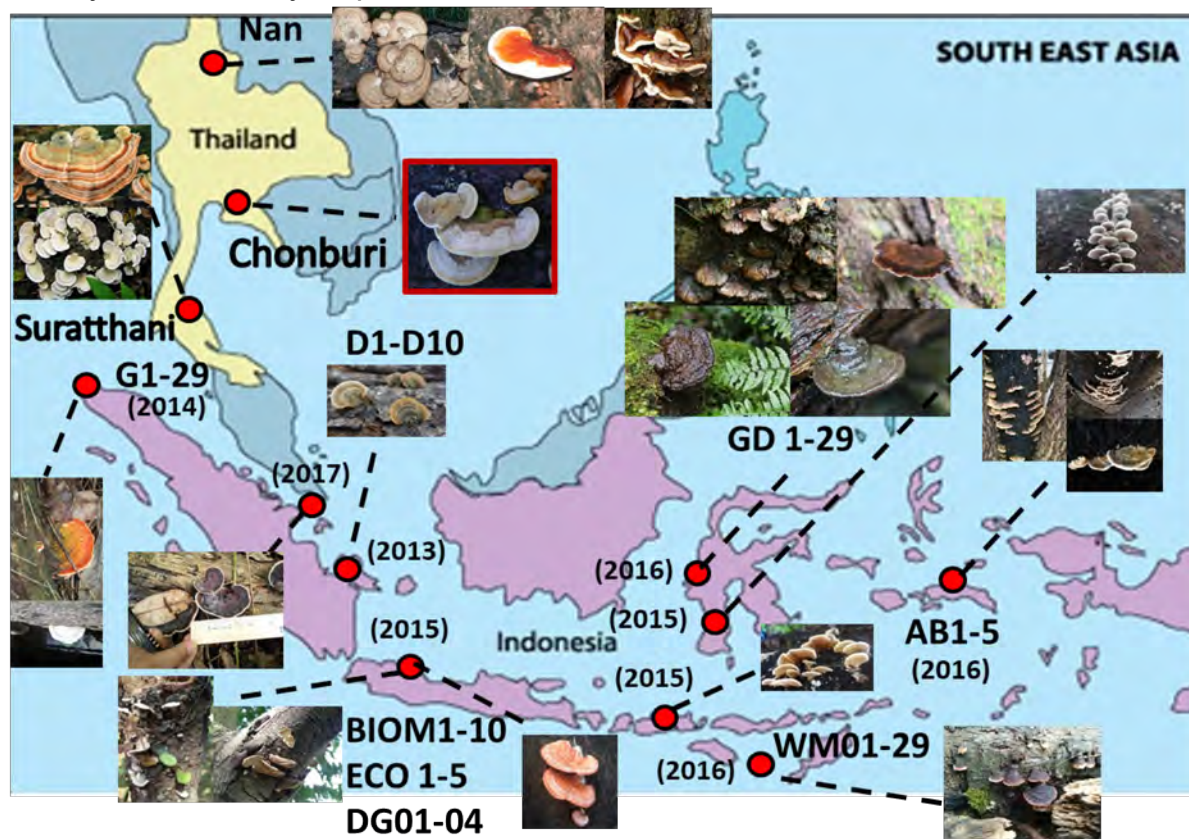
Decolorization and detoxification of synthetic dyes by enzymes immobilized on activated perlite (APE)

Dede Heri Yuli Yanto^{1,*}, Wichanee Bankeeree², Takashi Watanabe³, Raden Permana Budi Laksana¹, Hunsu Punnapayak², Maulida Oktaviani¹, Fahriya Puspita Sari¹, Sita Heris Anita¹, Hiroshi Nishimura³, Satoshi Oshiro³, Ruibo Li³, Chen Qu³, and Sehanat Prasongsuk²

¹Research Center for Biomaterials, Indonesian Institute of Sciences (LIPI), Indonesia

²Plant Biomass Utilization Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University, Thailand

³RISH, Kyoto University, Japan

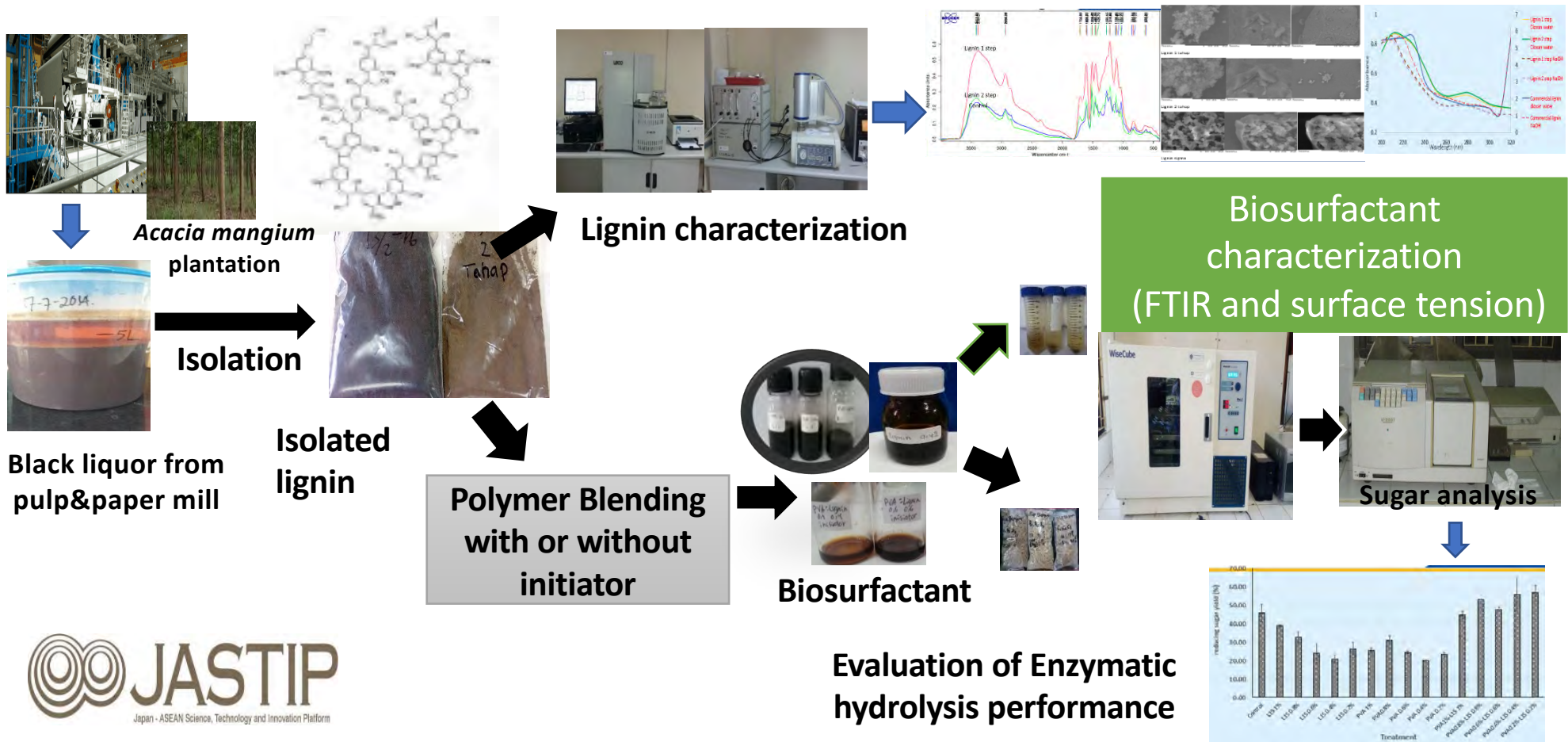


WP3: Bioresources and Biodiversity

Functionalization of Lignin Isolated from *Acacia mangium* Black Liquor by Polymer Blending and Grafting

Widya Fatriasari *, Euis Hermiati *, Triyani Fajriutami *, Nissa Nurfaejrin S *, R.Permana Budi Laksana *, Muhammad Ghozali *, Deddy Triyono Nugroho Adi **, Takashi Watanabe***

*Research Center for Biomaterials LIPI, **Research Center for Chemistry LIPI, ***Lab. Conversion Biomass, RISH-Kyoto University



Development of Integrated Process for Conversion of Sugarcane Trash to Bioethanol and Value-Added Chemicals

E. Hermiati, W. Fatriasari, T. Fajriutami, S. H. Anita, M. Ghozali, RP B. Laksana
LIPI, Indonesia

V. Champreda, P. Kanokratana, P. Unrean, B. Bunternngsook, A. Poonsrisawat
NSTDA, Thailand

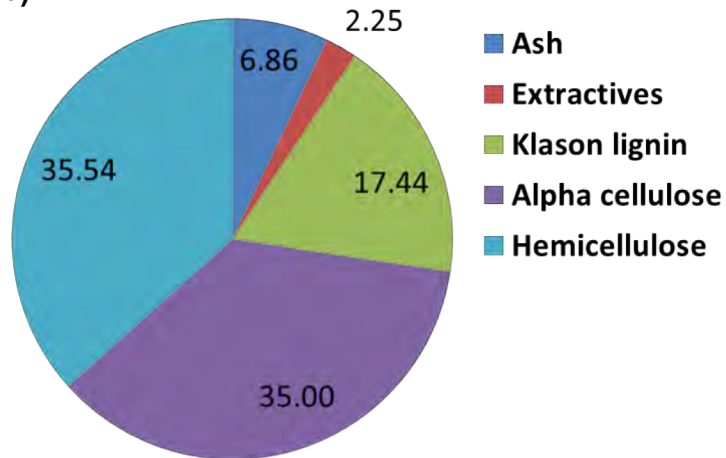
T. Watanabe, H. Nishimura, S. Oshiro, M. Katahira, T. Nagata, K. Kondo, H. Ohgaki
Kyoto University, Japan



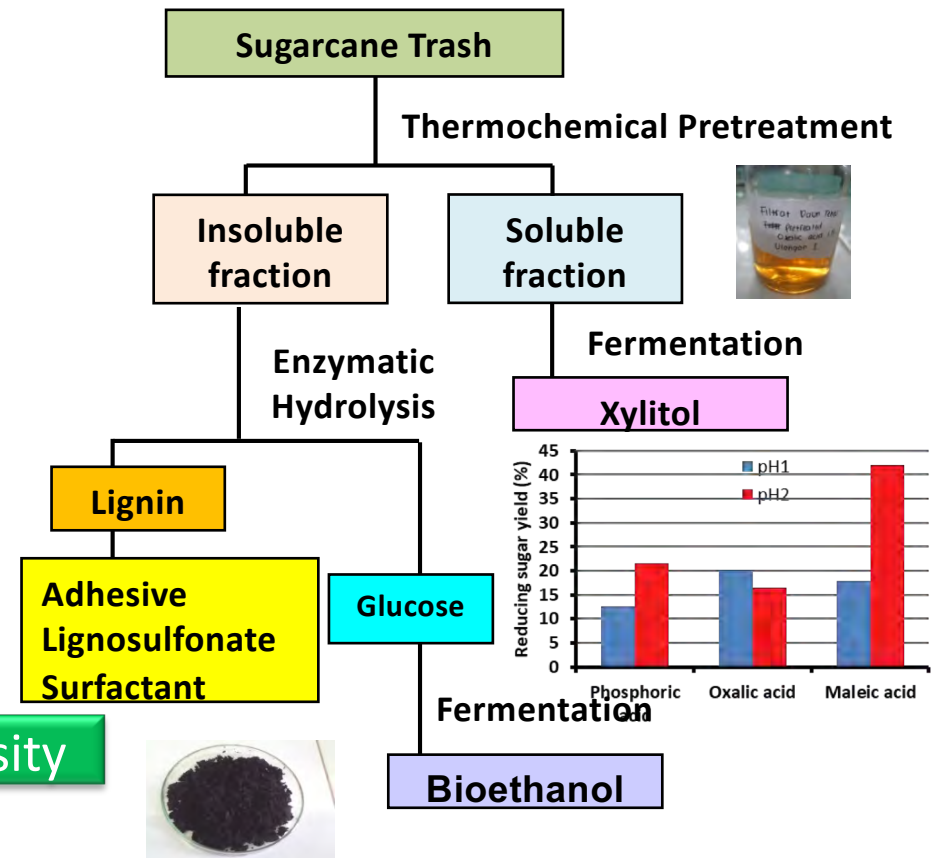
Sugarcane Production in million tonnes

Year	Indonesia	Japan	Thailand
2012	28.7	1.1	98.4
2013	28.4	1.2	100.0
2014	28.6	1.2	104.0

(FAOSTAT, 2016)



- Hydrothermolysis with organic acid
- Steam explosion
- Solvolysis (Glycerolysis)



WP3: Bioresources and Biodiversity

WP2: Environment and Energy

e-Asia program (FY2019-2021) (Expanded program from JASTIP-NET, WP2 & WP3 to e-Asia program)

Integrated biorefinery of sugarcane trash



Sugarcane trash

Underused biomass
17.2 Mt/year (Thailand)

Year 3: adapt technology to alternative biomass e.g. palm wastes

Kyoto Univ.



- RISH, IAE, GSE

Thailand



- NSTDA
- Chiang Mai Univ.

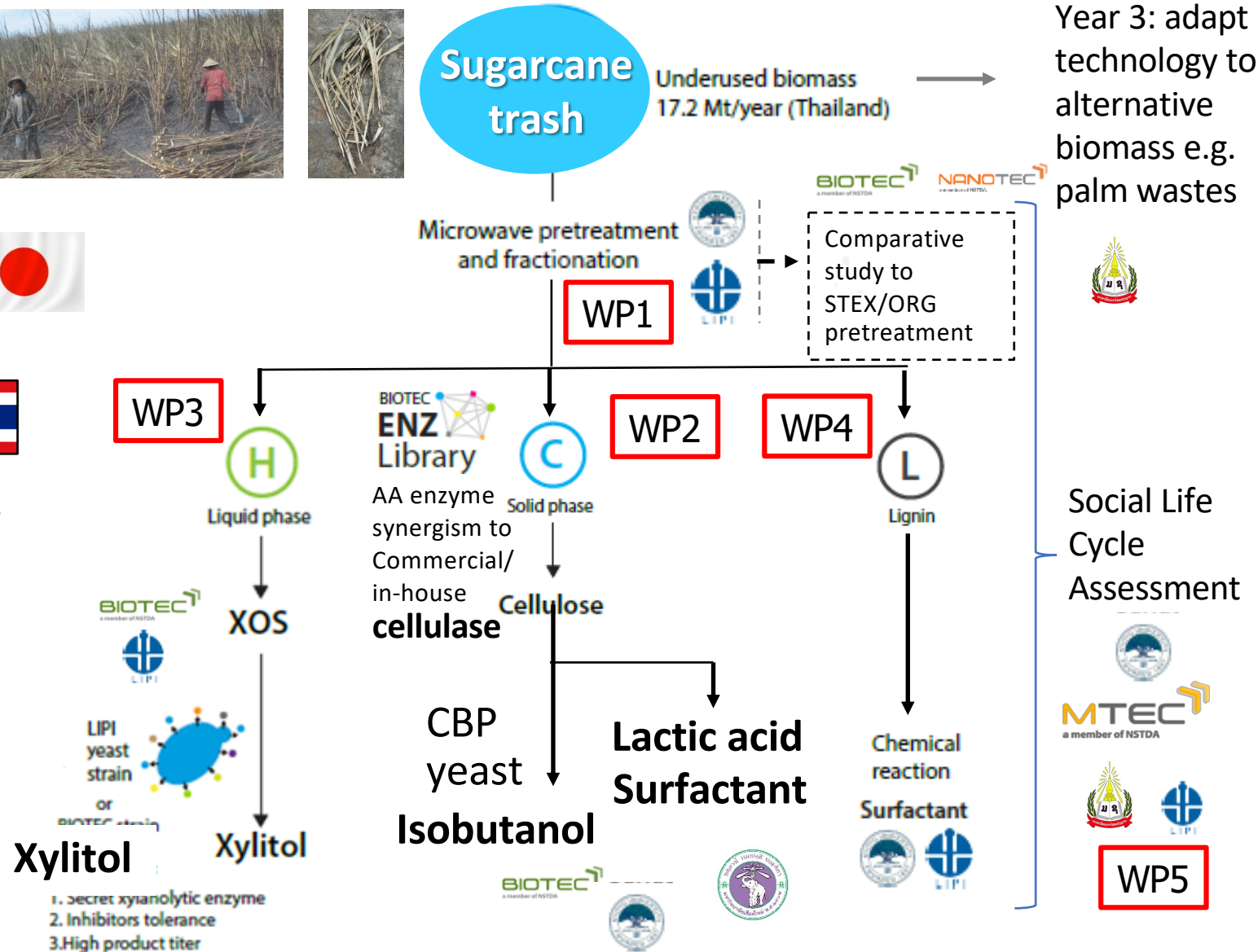
Indonesia

- LIPI



Laos

- National Univ. of Laos



WP3 JASTIP-NET Projects 2018-2019

24 applications to WP3 in 2018

1. Bioprospecting of plant resources in ASEAN countries to produce highly value-added products (2016-) **Indonesia-Thailand-Japan**

Wichan Eiadthon (Kasetsart University) , LIPI, Kyoto Univ.

2. A multi-disciplinary approach for investigating the ecology of **dugongs** in Con Dao Archipelago, Vietnam **Vietnam-Malaysia-Japan**

New

Vu Long (Center for Conservation of Endangered Species, Vietnam),
Louisa Shobini Ponnampalam (Malaysia), Kyoto Univ.



3. Bioremediation of synthetic dyes, polycyclic aromatic hydrocarbons (PAHs) and crude oil by tropical fungi from Indonesia and Thailand (2016-) **Indonesia-Thailand-Japan**

Dede Heri Yuli (LIPI), NSTDA, Kyoto Univ.

4. Development of **light-weight panel using super-fast-dried oil palm wood** as core and plywood as surfaces for building material **Indonesia-Malaysia-Thailand**

New

Edi Suhaimi BAKAR (UPM), LIPI, Kyoto Univ.

4 approved /24 applied



Symposium and Seminar

The 6th JASTIP Symposium Biodiversity, Genetic Resources and Innovative Bioresource Technology

Indonesia Convention Exhibition (ICE), Indonesia on 1st November

2 plenary speeches, 4 keynote speeches, 11 oral presentations

50 poster presentations and 200 participants

from LIPI, UNEP, MEXT, JST, KU, and Institutions of ASEAN and Japan



Keynote by
Dr. Lily Eurwilaichitr

Organized by RC Biology, RC Biomaterials and JASTIP



Industry-Academia Innovation Seminar & Business Matching for Biodiversity, Genetic Resources and Innovative Technology development in the ASEAN region

Indonesia Convention Exhibition (ICE), Indonesia on 2nd November

Two lectures by Dr. Enny Sudarmonowati and Prof. M. Suzuki on ABS system.

Business Matching: Eight Enterprises' flash talk and more than 15 pitches and
200 participants

Organized by Center for Innovation and JASTIP
in collaboration with RISTEKDIKTI



Scientist Exchange & Capacity Building

Dita Meisyara (LIPI) Dec 9-27, 2018

Yoko Takematsu(YamaguchiUni.)Dec 15-16, 2018

Didi Tarmadi(LIPI) Jan 7-25, 2019

Maya Ismayati(LIPI) Jan 7-16, 2019

Edi Suhaimi Bakar (Putra MalaysiaUni Associate Professor) Jan 28-31, 2019

Benjarat Bunterngsook(BIOTEC) Feb 3-16, 2019

Chayanon Chotirotsukon(King Mongkut's University of Technology) Feb 3-16, 2019

Nanang Masruchin(LIPI) Feb 16-23, 2019

Apriwi Zulfitri(LIPI) Feb 21-Mar 2, 2019

Anugerah Fajar(LIPI) Feb 21-Mar 2, 2019

Maulida Oktaviani(LIPI) Feb 27-Mar 12, 2019

Raden Permana Budilaksana(LIPI) Feb 27-Mar 12, 2019

Wichanee Bankeeree (ChulalongkornUniv.) Mar 5-13, 2019

Wahyu dwianto(LIPI) Mar 9-18, 2019

Danang Sudarwoko Adi(LIPI) Mar 19-30, 2019

Scientist Exchange & Capacity Building

[Benjarat Bunternngsook](#)(BIOTEC), July. 16-Aug. 11, 2018.

[Aphisit Poonsrisawat](#)(BIOTEC), July 16-29, 2018.

[Dede heri yuli yanto](#) (LIPI), August 19-25, 2018.

[Wichanee Bankeeree](#)(ChulalongkornUniv.) August 19-25, 2018.

[Prof. Subyakto](#)(LIPI) Nov 7-17, 2018.

[Eko Setio Wibowo](#)(LIPI) Nov 7-17, 2018.

[Agung Sumarno](#)(LIPI) Nov 7-17, 2018.

[Tekno-Ekonomi Bata CLC](#)(Cellular Leightweight Concrete)

[Ananto Nugroho](#)(LIPI)Nov 7-17, 2018.

[Dwi Ajas Pramasari](#)(LIPI) Nov 26-Dec 1, 2018.

[Adik Bahanawan](#)(LIPI) Nov 26-Dec 1, 2018.

[Sukma Surya Kusumah](#) (LIPI) Nov 26-Dec 5, 2018.

[Wida Banar Kusumaningrum](#) (LIPI) Nov 26-Dec 5, 2018.

[Khoirul Himmi Setiawan](#)(LIPI) Dec 9, 2018-Feb 8, 2019.

Scientist Exchange & Capacity Building

[Andria Agusta](#) (RC Biology) , April 8-17, 2018.

[Enos Tange Arung](#) (Mulawarman Univ.) May 1-30, 2018

[Wirdateti](#) (RC Biology), Sep. 26-Oct. 7, 2018.

[Khin Thant Sin](#) (Yangon Univ. of Distance Education) Oct. 31-Nov. 8, 2018.

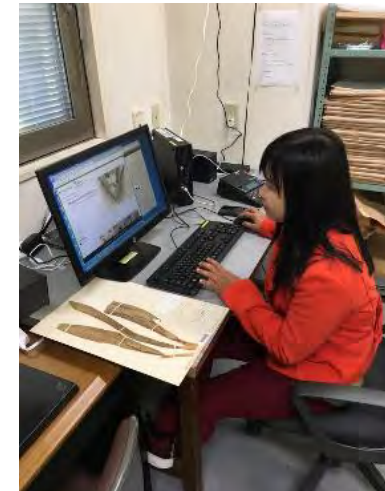
[Ahmad Fathoni](#) (RC Biology, LIPI) Nov. 5-21, 2018.

[Swe Swe Win](#) (Forest Research Institute, Myanmar) Nov. 6 - 17, 2018.

[Nithina Kaewtongkum](#) (Thailand Institute of Scientific and Technological

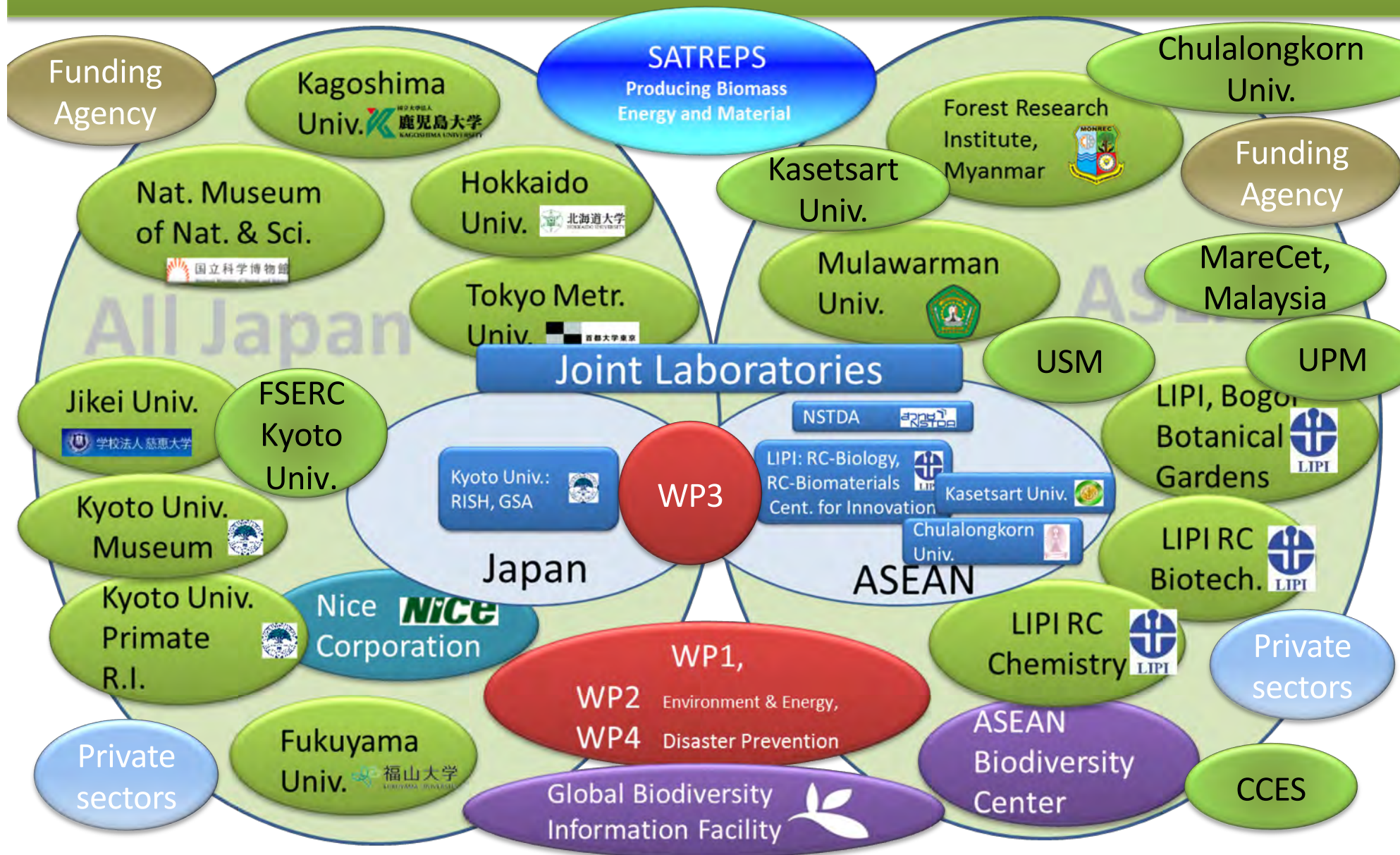
[Pangda Sopha Sushadi](#) (RC Biology, LIPI) Mar. 1-15, 2019.

[Kartika Dyah Palupi](#) (RC Biology, LIPI) Mar. 17-28, 2019.



Platform Connecting Japan and ASEAN

Bioresources and Biodiversity



Appendix

WP3 JASTIP-NET Projects 2017-2018

32 applications to WP3 in 2017

1. Bioprospecting of plant resources in ASEAN countries to produce highly value-added products (2016-) **Indonesia-Thailand-Myanmar-Japan**
Wichan Eiadthon (Kasetsart University) ,Khin Thant Sin (Pang Long University), LIPI, Kyoto Univ.
2. Stingless Bee Products from East Kalimantan Forest for Food and Medicine (2017-) **Indonesia-Japan**
Enos Tangke Arung (Mulawarman Univ), Kyushu Univ.
3. Development of integrated process for conversion of sugarcane trash to bioethanol and value-added chemicals (2016-)
Euis Hermiati(LIPI), Chulalongkorn Univ., Kyoto Univ. (WP2 & 3)
4. Decolorization and detoxification of synthetic dyes and PAHs by tropical fungi from Indonesia and Thailand (2016-)
Dede Heri Yuli (LIPI), NSTDA, Kyoto Univ.

4 approved /32 applied





Workshop of Bioresources and Biodiversity Research in JASTIP

International Premeeting of Humanosphere Asia Research Node on Biomass Utilization

(Joint Usage / Research Center)

Feb 17 (Wed) , 2016 15:00-18:00. Venue: Meeting room, S248, RISH, Kyoto University



- **Introduction**
(JASTIP, Asia Res Node, SATREPS)
- **Research on Bioresources, Biodiversity and Biomass Utilization**
- **Discussion for international collaboration**

2nd Asia Research Node (ARN) International Symposium

RISH, July 19-21, 2017

13 Countries, 41 Organizations, 228 Participants
Uji, Japan



The 343rd Symposium on Sustainable Humanosphere

The 2nd Asia Research Node Symposium on Humanosphere Science

Date: 19th – 21st July, 2017



Symposium Venue: Kihada Hall, Uji Campus, Kyoto University

Producing Biomass Energy and Material through Revegetation of Alang-alang Fields

Keynote speaker: Prof. Didik Widyatmoko (Bogor Botanic Gardens-LIPI, Indonesia)
Invited speakers: Prof. I Made Sudiana (LIPI, Indonesia), Dr. Reni Lestari (LIPI, Indonesia), Prof. Subyakti (LIPI, Indonesia), Dr. Shigeru Hanano (KDRI, Japan)

Wood Biomass Conversion - Green Chemistry and Biological Processes

Keynote speaker: Prof. Gunnar Westman (Chalmers University of Technology, Sweden)
Invited speakers: Dr. Chartchai Khanongnuach (CMU, Thailand), Dr. Takuya Akiyama (UTokyo, Japan), Dr. Jeremy Luterbacher (EPFL, Switzerland), Dr. Verawat Champreda (BIOTEC, Thailand)

Green Wood Technology

Keynote speaker: Prof. Zeli Que (Nanjing Forestry University, China)
Invited speakers: Dr. Yuliati Indrayani (UNTAN, Indonesia), Prof. Md. Iftekhar Shams (KU, Bangladesh), Dr. Takuro Mori (HiroshimaU, Japan)

Research Advances on Invasive Species Management

Keynote speaker: Prof. DeWayne Shoemaker (University of Tennessee, USA)
Invited speakers: Dr. Kouichi Goka (NIES, Japan), Prof. Fuminori Ito (KagawaU, Japan), Dr. Evan Economo (OIST, Japan), Prof. Damayanti Buchori (IPB, Indonesia), Prof. Chow-Yang Lee (USM, Malaysia), Dr. Chung-Chi Lin (NCUE, Taiwan)

Research Alliance on Water-logged Wood in East and South-East Asia

Keynote speaker: Prof. Kwang-Hee Lee (Korea National University of Cultural Heritage, Korea)
Invited speakers: Mr. Nahar Cahyandaru (BCO, Indonesia), Dr. Kazutaka Matsuda (NNRICP, Japan), Mr. Kouji Ito (OCCPA, Japan), Ms. Akiko Miyake (Hayashibara co., Ltd. Japan), Dr. Yohei Kohdzuma (NNRICP, Japan)

Remote Sensing of Tropical Forests from Space

Keynote speaker: Prof. Yoshio Yamaguchi (Niigata University, Japan)
Invited speakers: Dr. Gulab Singh (IIT Bombay, India), Mr. Rachmat Wahyono (PT. Musi Hutani Persada, Indonesia), Dr. Motoko S. Fujita (KyotoU), Dr. Shoko Kobayashi (TamagawaU, Japan)

Equatorial Fountain - Study of Atmosphere, Motion and Materials -

Keynote speaker: Prof. Fumio Hasebe (Hokkaido University, Japan)
Invited speakers: Dr. Albert Hertzog (LMD, France), Dr. Afif Budiyo (LAPAN, Indonesia), Dr. Masayuki Itoh (KyotoU), Dr. Osamu Kozaan (KyotoU), Dr. Tulasiram Sudarsanam (IGI, India)

Organized by

Research Institute for Sustainable Humanosphere (RISH), Kyoto University

Asia Research Node, RISH, Kyoto University

URL: http://www.rish.kyoto-u.ac.jp/news/am_2/

Contact person: Tsuyoshi Yoshimura – RISH, Kyoto University (tsuyoshi@rish.kyoto-u.ac.jp)

This program is supported by a subsidy from Kyoto Prefecture and Kyoto Convention & Visitors Bureau.





HSSSSH 2018

Humanosphere Science School 2018

The 8th International Symposium for Sustainable Humanosphere

The 384th Symposium on Sustainable Humanosphere

“Sustainable Humanosphere : On the Verge of Global Challenges and Human Security”

HOTEL GRANDHIKA | MEDAN INDONESIA



Prof. Yoshiharu Omura
Exploration of radiation belts by space radio engineering

Dr. Yuki Tobimatsu*
Plant cell wall structure and chemistry

Dr. Chatchai Khanongruak*
Recent situation and prospect of biomass conversion to biofuel and bioenergy in Thailand

Dr. Masahiro Sakamoto*
Engineering of carbon metabolism in plant biotechnology

*ISH Kyoto University, *CFOR, *University of Indonesia, *TC Biomaterials LIPI, *GSA Kyoto University, *Fai Chiang Mai University

SUBMISSION DEADLINE

- Registration : 2nd November 2017
- Abstract : 15th September 2017
- Full Paper : 15th October 2017

REGISTRATION & SUBMISSION

Registration and abstract submission should be done online at:
<http://situs.opi.lipi.go.id/hss2017/>

REGISTRATION
Registration fee (program book, lunch, coffee break included)

Categories	Local Participant		International Participant	
	Presenter	Non Presenter	Presenter	Non Presenter
Professional	IDR 500.000	IDR 400.000	USD 160	USD 50
Students	IDR 100.000	IDR 50.000	USD 75	USD 30

* Indexed publication
Selected paper will be published in:
1. IOP conference series: Earth and Environmental Science
2. Journal of Lignocellulose Technology (ISSN: 2548-8503; e-ISSN: 2548-8929)
3. Proceeding of 7th International Symposium for Sustainable Humanosphere (e-ISSN: 2579-5554)

** Accommodations (hotel) and cultural night dinner are not included.

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Phone/Fax: +62-21-87914511/+62-21-87914510



2nd JASTIP Symp & JASTIP WP3 Kick-off Symp

Jun 10-11, 2016
LIPI, headquarter



4th JASTIP Symposium

“Biomass to Energy, Chemicals and Functional Materials”

3,4 July 2017

130th Anniversary of Japan-Thailand Diplomatic Relations

The 4th JASTIP Symposium
“Biomass to Energy, Chemicals and Functional Materials”

3rd and 4th July 2017
Venue: NSTDA, Rangsit, Thailand

Venue
National Science and Technology Development Agency (NSTDA), Thailand

Co-organized by



In Collaboration with



Supported by





- Humanosphere Science School 2016 - **Bogor, Indonesia**
- The 329th Symposium on Sustainable Humanosphere - **15-16 Nov, 2016**
- The 6th International Symposium for Sustainable Humanosphere -



260 participants (cumulative total number in two days)

Asia Research Node Workshop 2nd JASTIP Bioresources & Biodiversity Lab Workshop

72 Participants, 16 presentations by foreign researchers,
11 presentations by Japanese researchers

Jan. 23, 2017 Venue: RISH, Kyoto Univ.



- **Research achievement and future plan of Bioresources, Biodiversity and Biomass Utilization studies**
- **Discussion for international collaboration and expansion⁵¹ of platform**

e-Asia program (FY2019-2021)

Integrated biorefinery of sugarcane trash

(Expanded program from JASTIP-NET, WP2 & WP3 to e-Asia program)

Kyoto University

- Research Institute of Sustainable Humanosphere (RISH)
- Institute of Advanced Energy (IAE)
- Graduate School of Energy (GSE)



Thailand

- NSTDA
- Chiang Mai University



Indonesia

- LIPI



Laos

- National University of Laos



e-Asia program (FY2019-2021) (Expanded program from JASTIP-NET, WP2 & WP3 to e-Asia program)

Integrated biorefinery of sugarcane trash



Sugarcane trash

Underused biomass
17.2 Mt/year (Thailand)

Year 3: adapt technology to alternative biomass e.g. palm wastes

Kyoto Univ.



- RISH, IAE, GSE

Thailand



- NSTDA
- Chiang Mai Univ.

Indonesia

- LIPI



Laos

- National Univ. of Laos

