

## CURRICULUM VITAE

TATAS HARDO PANINTINGJATI BROTOSUDARMO



Jenis Kelamin : Laki-Laki  
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 Alamat Tempat Tinggal : 1. Jl. Villa Puncak Dempo Blok U-11 Malang 65151, Indonesia  
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SK. Kemendikbud : 101801/A3/KP/2020  
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 H-index (Scopus) : 14 (59 publikasi, 664 sitasi)  
 H-index (GoogleScholar) : 17 (1104 sitasi)

PENDIDIKAN FORMAL DAN SERTIFIKASI NON-FORMAL  
 1998 – 2001 Universitas Kristen Satya Wacana, Salatiga, Indonesia, Kimia, Sarjana  
 2003 – 2006 Ludwig Maximilian Universität, Jerman, Kimia, Dipl.Chem.  
 2007 – 2010 University of Glasgow, Biologi Seluler dan Molekuler, Ph.D



- Luaran : Izin Penyelenggaraan Prodi Kimia, Kep. Menristekdikti RI No. 117/M/Kp/III/2015
- 2011 – 2020
- Posisi : Direktur/Kepala MRCPP
- SK Rektor : 1. 0052/MACHUNG/SK-REK/VIII/2011  
2. 0005/MACHUNG/SK-REK/I/2016  
3. 0002/MACHUNG/SK-REK/I/2020
- Tanggung Jawab Utama : memimpin, mempromosikan, merangsang, dan memfasilitasi penelitian yang unggul, perolehan dana, pengelolaan sumber daya, mengembangkan hubungan di seluruh dunia, dan membangun dan mengembangkan jaminan kualitas untuk lembaga penelitian.
- Luaran : MRCPP diangkat menjadi Pusat Unggulan Iptek Perguruan Tinggi berdasarkan SK Menteri Ristekdikti No. 11/M/Kp/II/2015 dan memperoleh Akreditasi Nasional Pranata Penelitian dan Pengembangan SK No. 03/Kp/KA-KNAPPP/VII/2016
- 2010 – 2011
- Institute of Biochemistry and Cell Biology, University of Glasgow, UK
- Posisi : Research Associate
- Tanggung Jawab Utama : Melakukan penelitian bersama antara Inggris-AS dengan fokus pada penentuan struktur kristal kompleks protein-pigmen pemanen cahaya baru di bawah pendanaan the Photosynthetic Antenna Research Center, US Department of Energy, Science of Science, Office of Basic Energy Sciences (DE-SC 0001035) dan sebagai pembimbing lapangan mahasiswa S3.
- 2007 – 2010
- Faculty of Biomedical and Life Sciences, University of Glasgow, UK.
- Posisi : Early-Stage Marie Curie Researcher
- Tanggung Jawab Utama : Melaksanakan riset garda depan dalam proyek Bio-inspired Molecular Opto-electronics yang didukung oleh hibah dari the European Commission through the Human Potential Program (Marie-Curie RTN BIMORE, MRTN-CT-2006-035859).
- 2007
- Department of Physical Chemistry, Ludwig Maximilian Universität München, Munich, Germany
- Posisi : Research Assistant
- Tanggung Jawab Utama : Melakukan penelitian dalam penerapan metode fluoresensi ultrasensitif pada virus pembungkus dan tunas dengan fokus pada HIV.

#### PENGALAMAN AKADEMIK DAN MANAJERIAL LAIN

- 2021 – 2023 Komite Proyek dan trainer di bidang Tata Kelola Riset dan Penjaminan Mutu dalam program *Workshop University Management and Leadership under DIES Partnership programme*, yang dikoordinasikan oleh The University of Applied Science Osnabrück, Jerman, website: <https://www.hs-osnabrueck.de/dies-partnership-indonesia/project-committee/>
- 2018 – 2020 Wakil Ketua bidang Sains dan Kebijakan, Akademi Ilmuwan Muda Indonesia (ALMI)
- 2018 Koordinator Proyek dan Trainer dari program Indonesia Deans' Course for Private Higher Institution (INADC-PHEI) yang didanai oleh the German Federal Ministry for Economic Development and Cooperation (BMZ).  
Tanggung Jawab Utama: Memperoleh dana dan mengawasi pelaksanaan workshop INADC-PHEI yang diikuti oleh 25 rektor, wakil rektor, dekan, wakil dekan, dan direktur Perguruan Tinggi Swasta se-Indonesia. Website: <https://www.dies-nmt.org/booking/course/7d5ea470.html>
- 2018 Peneliti Tamu (Juni – Juli 2018) di Max-Planck-Institute for Molecular Plant Physiology, Potsdam-Golm and Institute for Biology/Plant Physiology, Humboldt University, Berlin, Jerman
- 2017 – 2020 Honourable Associate Professor, Faculty of Science, Shizuoka University, Jepang
- 2017 – 2019 Chair of Marie Curie Alumni Association (MCAA) Southeast Asia Chapter
- 2017 – 2019 Ketua Himpunan Kimia Indonesia (HKI)
- 2016 – 2018 Associate External Doctoral Supervisor & Examiner, Graduate Studies, Swinburne University of Technology, Serawak, Malaysia
- 2008 Peneliti Tamu, National Laboratory for Ultrafast and Ultratense Optical Science (CNR/INFN ULTRAS), University of Milan, Italia
- 2007 – 2008 Peneliti Tamu, Köhler Laboratory, Experimental Physics IV, Universität Bayreuth, Jerman

#### PEROLEHAN PENGHARGAAN

- 2020 Georg Foster Research Fellowship for Experienced Researchers, the Alexander von Humboldt Foundation
- 2018 DAAD Research Stays for University Academics and Scientist
- 2017 The Study UK Alumni Award 2017 Professional Achievement Award, British Council. Tautan: <https://www.britishcouncil.id/en/tatas-hardo-panintingjati-brotosudarmo>
- 2017 Dosen Berprestasi Peringkat ke-2 Kopertis Wilayah VII Jawa Timur
- 2016 Anggota Akademi Ilmuwan Muda Indonesia (ALMI)
- 2016 The 22<sup>nd</sup> Toray Science and Technology Award, Indonesia Toray Science Foundation – Toray Industries Japan. Tautan: [http://cs2.toray.co.jp/news/id/itsf\\_newsrrs01.nsf/id/357C8D91511C7B6B49257FDA00080DA8](http://cs2.toray.co.jp/news/id/itsf_newsrrs01.nsf/id/357C8D91511C7B6B49257FDA00080DA8)
- 2015 Tempo Distinguish Young People 2015, Tempo Indonesia
- 2013 Dosen Berprestasi Peringkat ke-2 Kopertis Wilayah VII Jawa Timur
- 2013 Best Presenter Award, The Indonesian Toray Science and Technology Research Grant in cooperation with Japan Toray Science Foundation

- 2013 Invited Young Scientist, 63rd Meeting of Nobel Laureate in Lindau, Jerman. Tautan: <http://www.lindau-repository.org/public/ParticipantDirectory2013.pdf>
- 2012 Fellow of Kavli Frontier of Science. Tautan: <http://www.nasonline.org/programs/kavli-frontiers-of-science/frontiers-alumni/alumni-directory/tatas-brotosudarmo.html>
- 2007 Marie Curie Fellow. Tautan: <http://www.h2020.cz/cs/storage/feaf5dccb734ed7fbb1df34216f7c476279f14ea?uid=feaf5dccb734ed7fbb1df34216f7c476279f14ea>

#### KEANGGOTAAN PROFESIONAL

Royal Society of Chemistry, 2015 – hingga sekarang  
Himpunan Kimia Indonesia, 2011 – hingga sekarang (sebagai Ketua di periode 2017-2019)

#### PEROLEHAN HIBAH

- 2020 – 2021 “Pengembangan Teknologi Pengolahan Pisang Lokal Dengan Karotenoid Dan Nutrisi Tinggi Sebagai Pangan Fungsional Untuk Meningkatkan Imunitas Dalam Masa Pandemi Covid-19”. Program Pendanaan Konsorsium Riset Dan Inovasi Untuk Percepatan Penanganan Corona Virus Disease 2019 (COVID-19).  
Besaran Hibah: IDR 100,000,000 (T-1), IDR 100,000,000 (T-2)
- 2019 – 2020 “Karakterisasi karotenoid langka dan karotenoid-protein kompleks dari mikroorganisme laut dan gen yang berperan dalam biosintesisnya”. Direktorat Riset dan Pengabdian Masyarakat Skema Penelitian Dasar.  
Besaran Hibah: IDR 124,300,000 (T-1), IDR 111,150,000 (T-2)
- 2019 – 2021 “Molecular response of marine microalgae to inhibitions of metabolic enzymes at the formation of light harvesting apparatus”. Direktorat Riset dan Pengabdian Masyarakat Skema World Class Research Grant.  
Besaran Hibah : IDR 142,220,000 (T-1), IDR 131,360,000 (T-2), IDR 137,860,000 (T-3)
- 2018 Program Pelatihan National Multiplication Training (NMT) “Indonesia Dean’s Course for Private Higher Education Institution (INADC-PHEI). Federal Ministry for Economic Cooperation and Development, Jerman.  
Besaran Hibah: IDR 138,600,000
- 2016 – 2018 “Determinasi Pigmen dan Kompleks Protein-Pigmen Berbagai Organisme Fotosintetik Dengan Multispektra dan LCMS “. Direktorat Riset dan Pengabdian Masyarakat Skema Hibah Kompetensi.  
Besaran Hibah: IDR 125,000,000 (T-1), IDR 115,572,000 (T-2), IDR 105,000,000 (T-3)
- 2016 Hibah Alumni DAAD “Allocation of Scientific equipment grants to higher education institutions abroad”, German Federal Ministry for Economic Cooperation and Development (BMZ).  
Besaran Hibah: IDR 367,200,000
- 2016 – 2017 “Produksi dan Aplikasi Vitamin A”. Direktorat Riset dan Pengabdian Masyarakat Skema Pusat Unggulan Strategis Nasional.  
Besaran Hibah: IDR 650,000,000 (T-1), IDR 500,000,000 (T-2)
- 2016 – 2017 Hibah dari industri, berjudul “Monitoring of biodiversity and natural health with remote sensing technologies to improve sustainable management of farming within natural resources” oleh Navama GmbH, Jerman.

- 2016 Besaran Hibah: IDR 84,896,000 (T-1), IDR 84,896,000 (T-2)  
 “Superantioksidan Berbasis Pigment Alami”. Direktorat Riset dan Pengabdian Masyarakat Skema Pusat Unggulan Perguruan Tinggi.  
 Besaran Hibah: IDR 128,883,415
- 2015 – 2017 “Pigment Standar”. Direktorat Riset dan Pengabdian Masyarakat Skema Pusat Unggulan Perguruan Tinggi.  
 Besaran Hibah: IDR 128,883,415 (T-1), IDR 200,000,000 (T-2), IDR 200,000,000 (T-3)
- 2013 “Reconstitution of Light-Harvesting Complexes with Different Absorption Spectra for Use in Bio-hybrid Solar Cells”. TWAS the Academic of Sciences for the Developing world Research Grant Agreement Number: 11-022 RG/BIO/AS\_I-UNESCO FR 3240262677.  
 Besaran Hibah: USD13,000
- 2013 – 2015 “Optimasi Pemanfaatan Limbah CPO Sebagai Pewarna Alami Sumber Pro Vitamin A Potensial”. Direktorat Riset dan Pengabdian Masyarakat Skema Strategis Nasional (Stranas).  
 Besaran Hibah: IDR 87,500,000 (T-1), IDR 92,705,587 (T-2), IDR 77,000,000 (T-3)
- 2012 – 2014 “Understanding the Quaternary Structure of Unusual Light Harvesting Complexes from Photosynthetic Purple Bacteria and Reconstitution of Artificial Light Harvesting Complexes for Use in Biohybrid Solar Cell”. Direktorat Riset dan Pengabdian Masyarakat Skema Kerjasama Luar Negeri dan Publikasi Internasional.  
 Besaran Hibah: IDR 182,000,000 (T-1), IDR 196,330,000 (T-2), IDR 132,500,000 (T-3)
- 2012 – 2014 “Desain Prototipe Sel Surya Biohybrid: Kontrol Performansi Penangkapan Energi Cahaya dalam Skala Nano”. Insentif RISTEK SiNAS.  
 Besaran Hibah: IDR 250,000,000 (T-1), IDR 350,000,000 (T-2), IDR 250,000,000 (T-3)
- 2011 “Understanding of the polypeptides composition and the quaternary structures of the peripheral light-harvesting complexes from *Rhodospseudomonas palustris* grown at different light intensities”. Indonesian Toray Science Foundation, 18<sup>th</sup> Science and Technology Research Grant.  
 Besaran Hibah: IDR 38,260,000

#### PENYELENGGARAAN KERJASAMA YANG DIBINA

No.	Jenis MoU/Kontrak Perjanjian	Institusi	Poin Utama Kerjasama
1	Memorandum Of Understanding between Ma Chung Research Center for Photosynthetic Pigments, Universitas Ma Chung, Indonesia and The OCU Advanced Research Institute for Natural Science and Technology and Research Center for Artificial Photosynthesis, Osaka City University, Japan	Osaka City University	Promoting cooperation in the fields of education and academic research (collaborative research, lectures, symposium, exchange scholars, exchange students, etc.)
2	Agreement on Academic Exchange Between Universitas Ma Chung	Shizuoka University	(1) exchange of academic and administrative personnel

	Republic of Indonesia and Shizuoka University, Japan		(2) exchange of students (3) exchange of academic information and knowledge (4) other exchange activities to which both universities agree
3	Memorandum of Understanding Between Universitas Ma Chung Republic of Indonesia and Shizuoka University, Japan Regarding Student Exchange	Shizuoka University	Student exchange
4	Collaborative Research Agreement	Shizuoka University	Agreement on Academic Research
5	Memorandum of Agreement on Academic Cooperation between 1. School of Pharmaceutical Science and Technology, Tianjin University, P. R. China And 2. Ma Chung Research Center for Photosynthetic Pigment (MRCPP), Universitas Ma Chung, Republic of Indonesia	Tianjin University	1) Exchange of academic publications, materials and information 2) Exchange of faculty, visiting scholars and postdoctoral research fellows 3) Student exchange programs 4) PhD candidate supervision 5) Joint research activities and meetin
6	Memorandum of Understanding between Indonesian Chemical Society (ICS) and Chemical Society of Thailand (CST)	ICS - CST	promote the academic and industrial development of both countries through mutual exchange program
7	Research Agreement- Monitoring of biodiversity and nature health with remote sensing technologies to improve sustainable management of farming within natural resources (This is an extension of joint work done in 2016)	Navama GmbH	Research Project
8	Research Collaboration Agreement Ma Chung Research Center for Photosynthetic Pigments, Univeristas Ma Chung Indonesia and Center for Sustainable Nanomaterials, Ibnu Sina Institute for Scientific & Industrial Research, Universiti Teknologi Malaysia, MALAYSIA ON Research Collaboration and Human Resources Development	UTM Malaysia	1. Research collaboration on devloement and validation of sustainable Material 2. Human resource development
9	Memorandum of Understanding Between Ma Chung Research Center for Photosynthetic Pigments Universitas Ma Chung and Shimadzu (Asia Pacific) Pte Ltd on the Collaboration for Research	Shimadzu (Asia Pacific) Pte Ltd	To strengthen and promote their co-operation in the fields of analytical research within the following areas: a) Elucidation of structure and functions of photosynthetic pigments and

			pigment-protein complexes with HPLC, LC-MSMS and other spectroscopy methods; and b) Workshops on chromatography and spectroscopy
10	Research Project - Monitoring of biodiversity and nature health with remote sensing technologies to improve sustainable management of farming within natural resources This is an extension of joint work done in 2016 (see report XX)	Navama GmbH	Research Project (continue)
11	Agreement of Collaboration Amon Consortium Member: The Implementation of Consortium, Acquisition of Research Grant, Research Development, and Science and Technology Application as Consortium “Indonesian-German Network for Research Collaboration”	IGN-Biosciences	To develop research collaboration in BIODIVERSITY AND HUMAN HEALTH, through commitment to the network, enhancing collaboration within the network, mutual scientific support, mutual respect, and mutual trust
12	Memorandum of Understanding on Academic and Scientific Cooperation between Ma Chung Research Center for Photosynthetic Pigments, Universitas Ma Chung, Indonesia and The Laboratory of Professor Dr. Hab. Leszek Fiedor of Jagiellonian University, Krakow, Poland	Jagiellonian University In Krakow	collaborative activities in the academic and scientific areas of mutual interest, on a basis of equality and reciprocity
13	Nota Kesepahaman antara Universitas Ma Chung dengan PT. Mitra Ayu Adi Pratama	PT. Mitra Ayu Adi Pratama	Kerjasama antara institusi riset dengan industri dalam upaya pengembangan dan pemanfaatan sumber daya alam Indonesia antara lain dengan transfer teknologi metode ekstraksi pemurnian pigmen, penelitian inovatif
14	Lembar Kesepakatan Kerjasama antara Panitia 3rd Materials Research Society of Indonesia (MRS-id) Meeting 2018 dengan Ma Chung Research Center for Photosynthetic (MRCPP), Universitas Ma Chung	MRS-id	Kerjasama mendukung pelaksanaan 3rd Materials Research Society of Indonesia (MRS-id) Meeting 2018
15	Perjanjian Kerjasama antara Pusat Unggulan Iptek-Perguruan Tinggi (PUI-PT) Ma Chung Research Center for Photosynthetic Pigments (MRCPP), Universitas Ma Chung dengan PT. Mitra Ayu Adi Pratama	PT. Mitra Ayu Adi Pratama	Kerjasama antara institusi riset dengan industri dalam upaya pengembangan dan pemanfaatan sumber daya alam Indonesia antara lain dengan transfer teknologi metode ekstraksi pemurnian pigmen, penelitian inovatif



16	Nota Kesepahaman antara Balai Konservasi Tumbuhan Kebun Raya Purwodadi Lembaga Ilmu Pengetahuan Indonesia dan Pusat Unggulan Ilmu Pengetahuan dan Teknologi Ma Chung Research Center for Photosynthetic Pigments, Universitas Ma Chung tentang Kerjasama Penelitian, Pengembangan, dan Pemanfaatan Ilmu Pengetahuan dan Teknologi	Balai Konservasi Kebun Raya Purwodadi Lembaga Ilmu Pengetahuan Indonesia	Mempromosikan kegiatan ilmiah antara kedua belah pihak melalui kerjasama penelitian, pengembangan dan pemanfaatan ilmu pengetahuan dan teknologi yang akan mencakup penelitian bidang ilmu pengetahuan hayati dan bidang lain yang terkait, khususnya bidang prioritas strategis di Indonesia.
17	Nota Kesepahaman Pusat Riset Aneka Kacang dan Umbi Balai Penelitian Tanaman Aneka Kacang dan Umbi dengan Ma Chung Research Center for Photosynthetic Pigments Universitas Ma Chung tentang Kerjasama Riset	Balitkabi	Kerja sama penelitian yang berkaitan dengan pigmen alami dan hubungannya dengan kualitas tanaman dan hasil tanaman aneka kacang dan umbi
18	Perjanjian Kerjasama antara PT. Indesso Aroma – Jakarta dan Ma Chung Research Center for Photosynthetic Pigments, Universitas Ma Chung, Malang	PT. Indesso Aroma – Jakarta	<ul style="list-style-type: none"> <li>a. Memetakan sourcing dan potensi output rumput laut coklat sebagai bahan baku pigmen fungsional.</li> <li>b. Melakukan penelitian ekstraksi dan isolasi Fucoxanthin dari rumput laut coklat untuk selanjutnya bisa diup-scaling pada proses komersial.</li> <li>c. Melakukan uji kualitas dan uji klinis melalui kerjasama dengan pihak ke-3 sebagai bahan untuk promosi secara komersial.</li> </ul>
19	Perjanjian Kerjasama Komersialisasi Hasil Riset antara Ma Chung Research Center For Photosynthetic Pigments Universitas Ma Chung dengan PT Benih Inovasi Teknologi	PT Benih Inovasi Teknologi	Kerjasama ini meliputi kegiatan komersialisasi hasil penelitian teknologi informasi pada bidang penelitian pigmen fotosintetik

## Daftar Publikasi Tatas Hardo Panintingjati Brotosudarmo

\* = sebagai penulis korespondensi

### A) Buku dan *Book Chapter*

1. Murdiyarso, D., Tjoa, A., **Brotosudarmo, T.**, Juliandi, B., Mumbunan, S., Supriatna, J., Muladno, Iskandar, D. (2021) COVID-19 dan Ketahanan Pangan. In: Ragam Perspektif Dampak COVID-19, Oey-Gardiner, M. and Amin Abdullah, M. (Eds.), Jakarta, Yayasan Pustaka Obor Indonesia, Print ISBN 978-623-321-081-2.
2. **Brotosudarmo, T.H.P.**, Limantara, L., Heriyanto (2019) Kimia Analitik Instrumentasi – Sebuah Pengantar dengan Aplikasinya dalam Analisis Pigmen Alami, Jakarta, Penerbit Salemba Teknika, ISBN 978-979-9549-50-1
3. **Brotosudarmo, T.H.P.**, Limantara, L., Chandra, R.D., Heriyanto (2018) Chloroplast pigments: structure, function, assembly and characterisation. In: Plant Growth and Regulation – Alterations to Sustain Unfavorable Conditions, Diah Ratnadewi and Hamim (Eds.), IntechOpen, Print ISBN 978-1-78984-285-2, DOI: 10.5772/intechopen.75672

### B) Publikasi Jurnal

1. Indrawati, R., Zubaidah, E., Sutrisno, A., Limantara, L., & **Brotosudarmo, T. H. P.** (2021). The Remnant photosynthetic pigments in tea dregs: identification, composition, and potential use as antibacterial photosensitizer. *Potravinarstvo Slovak Journal of Food Sciences*, 15, 835–845.
2. Indrawati, R., Zubaidah, R., Sutrisno, A., Limantara, L., Yusuf, M.M., **Brotosudarmo, T.H.P.** (2021) Visible light-induced antibacterial activity of pigments extracted from dregs of green and black teas, *Scientifica*, 2021, 5524468
3. **Brotosudarmo, T.H.P.\***, Limantara, L., Pringgenies, D. (2021) Recent exploration of bioactive pigments from marine bacteria, *ScienceAsia*, 47, 566-270
4. Jodiawan, Chrisdiyanti, D.N, Vi'atin, N., Prihastyanti, M.N.U., Chandra, R.D., Heriyanto, Siswanti, C.A., Hapsari, L., **Brotosudarmo, T.H.P.\*** (2021) Carotenoid analysis from commercial banana cultivar (*Musa spp.*) in Malang, East Java, Indonesia, *Indonesian Journal of Chemistry*, 21(3), 690-698
5. Dwivany, F.M., Sukriandi, N., Meitha, K., **Brotosudarmo, T.H.P.** (2021) In silico characterization of the structure of genes and proteins related to  $\beta$ -carotene degradation in *Musa acuminata* 'DHPahang' and *Musa balbisiana* 'Pisang Klutuk Wulung'., *Tropical Agricultural Science*, 44(2), 429-447
6. Prilianti, K.R; Setiyono, E.; Kelana, O.H.; **Brotosudarmo, T.H.P.** (2021) Deep Chemometrics for Nondestructive Photosynthetic Pigments Prediction Using Leaf Reflectance Spectra, *Information Processing in Agriculture*, 8(1), 194-204
7. Heriyanto, Gunawan, I.A., Fujii, R., Maoka, T., Shioi, Y., Kameubun, K.M.B., Limantara, L., **Brotosudarmo, T.H.P.\*** (2021) Carotenoid composition in buah merah (*Pandanus conoideus* Lam.), an indigenous red fruit of the Papua Islands, *Journal of Food Composition and Analysis*, 96, 103722
8. **Brotosudarmo, T.H.P.\***, Limantara, L., Setiyono, E., Heriyanto (2020) Structures of Astaxanthin and Their Consequences for Therapeutic Application, *International Journal of Food Science*, 2020, ID 2155682

9. Chandra, R.D.; Siswanti, C.A.; Prihastyanti, M.N.U.; Heriyanto; Limantara, L.; **Brotosudarmo, T.H.P.\*** (2020) Evaluating Provitamin A Carotenoids and Polar Metabolite Composition during the Ripening Stages of the Agung Semeru Banana (*Musa paradisiaca* L. AAB), *International Journal of Food Sciences*, 2020, ID 8503923
10. Setiyono, E.; Adhiwibawa, A.S.; Indrawati, R.; Prihastyanti, M.N.U.; Shioi, Y.; **Brotosudarmo, T.H.P.\*** (2020) An Indonesian marine bacterium, *Pseudoalteromonas rubra*, produces antimicrobial prodiginine pigments, *ACS Omega*, 5, 9, 4626-4635
11. Setiyono, E., Heriyanto, Pringgienies, D., Kanesaki, Y., Awai, K., **Brotosudarmo, T.H.P.\*** (2019) Sulfur-containing carotenoids from a marine coral symbiont *Erythrobacter flavus* strain KJ5, *Marine Drugs*, 17, 349
12. Kanesaki, Y., Setiyono, E., Pringgienies, D., Moriuchi, R., **Brotosudarmo, T.H.P.**, Awai, K. (2019) Complete genome sequence of the marine bacterium *Erythrobacter flavus* strain KJ5, *Microbiology Resource Announcements*, 8, e00140-19
13. Indrawati, R., Kurniawan, J.M., Wibowo, A.A., Juliana, Gunawan, I.A., Heriyanto, **Brotosudarmo, T.H.P.** (2019) Integrated solvent-free extraction and encapsulation of lutein from marigold petals and its application, *CyTA - Journal of Food*, 17 (1), 121-127
14. **Brotosudarmo, T.H.P.\***, Heriyanto, Shioi, Y., Indriatmoko, Adhiwibawa, M.A.S., Indrawati, R., Limantara, L. (2018) Composition of the main dominant pigments from potential two edible seaweeds, *Philippine Journal of Science*, 147(1), 47-55
15. Juliadiningtyas, A.D., Pringgienies, D., Heriyanto, Salim, K.P., Radjasa, O.K., Shioi, Y., Limantara, L., **Brotosudarmo, T.H.P.\*** (2018) Preliminary investigation of the carotenoid composition of *Erythrobacter* sp. Strain KJ5 by high-performance liquid chromatography and mass spectrometry, *Philippine Journal of Science* 147(1), 93-100
16. Limantara, L., Indrawati, R., Wijaya, D.E., Sulistiawati, E., Suparto, I.H., Wijayanti, R.D.E., **Brotosudarmo T.H.P.** (2017) Hypocholesterolemic effect and pigments composition of herbal medicine containing higher and lower plants, *International Journal of Pharmacy and Pharmaceutical Sciences*, 9(11), 97-103
17. Heriyanto, Juliadiningtyas, A.D, Shioi, Y., Limantara, L., **Brotosudarmo, T.H.P.\*** (2017) Analysis of pigment composition of brown seaweeds collected from Panjang Island, Central Java, Indonesia, *Philippine Journal of Science* 146(3): 323-330
18. Prihastyanti, M.N.U., Heriyanto, H. and **Brotosudarmo, T.H.P.\*** (2016) Photostability of purple bacterial light-harvesting complexes towards exposure of light illumination traced by pigment ratio, *Jurnal Teknologi*, 78(4-2)
19. Indrawati, R., Chomiuk, A., Indriatmoko, Adhiwibawa, M.A.S., Siahaan, D., **Brotosudarmo, T.H.P.** and Limantara, L. (2015) Stability of palm carotenes in an organic solvent and in a food emulsion system, *International Journal of Food Properties*, 18(11), 2539-2548
20. Bujak, L., Olejnik, M., **Brotosudarmo, T.H.P.**, Schmidt, M.K., Czechowski, N., Piatkowski, D., Aizpurua J., Cogdell, R.J., Heiss, W., Mackowski, S. (2014) Polarization control of metal-enhanced fluorescence in hybrid assemblies of photosynthetic complexes and gold nanorods, *Physical Chemistry Chemical Physics*, 16, 9015-9022
21. Bucynska, D., Bujak, L., Loi, M.A., **Brotosudarmo, T.H.P.**, Cogdell, R., Mackowski, S. (2012) Energy transfer from conjugated polymer to bacterial light-harvesting complex, *Applied Physics Letters* 101, 173707
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### C) Publikasi di Prosiding

1. Adhiwibawa, M.A.S., Limantara, L., **Brotosudarmo, T.H.P.\*** (2021) Rapid identification of urban green space using Planetscope satellite image and artificial intelligence, *Journal of Physics: Conference Series*, 1867, 012074
2. **Brotosudarmo, T.H.P.\***, Wibowo, A.A., Heriyanto, Adhiwibawa, M.A.S. (2019) Single cells diatom *Chaetoceros muelleri* investigated by homebuilt confocal fluorescence spectro-microscopy, *Proc. SPIE* 11044, 110440E
3. Adhiwibawa, M.A.S., Ariyanto, M.R., Struck, A., Prilianti, K.R., **Brotosudarmo, T.H.P.\*** (2019) Convolutional neural network in image analysis for determination of mangrove species, *Proc. SPIE* 11044, 1104401
4. Prilianti, K.R., **Brotosudarmo, T.H.P.**, Anam, S., Suryanto, A. (2019) Performance comparison of the convolutional neural network optimizer for photosynthetic pigments prediction on plant digital image, *AIP Conference Proceedings*, 2084, 020020
5. Prilianti, K.R., Hariyanto, S., Natali, F.D.D., Indriatmoko, Adhiwibawa, M.A.S., Limantara, L., **Brotosudarmo, T.H.P.\*** (2016) Artificial neural network model for

- photosynthetic pigments identification using multi wavelength chromatographic data, *The American Institute of Physics Conference Proceedings*, 1723, 030016
6. Adhiwibawa, M.A.S., Setiawan, Y.E., Prilianti, K.R., **Brotosudarmo, T.H.P.\*** (2015) Web camera as low cost multispectral sensor for quantification of chlorophyll in soybean leaves, *Proceeding of SPIE9444*, doi:10.1117/12.2080951
  7. Adhiwibawa, M.A.S., Setiawan, Y.E., Setiawan Y., Prilianti, K.R., **Brotosudarmo, T.H.P.\*** (2015) Application of simple multispectral image sensor and artificial intelligence for predicting of drought tolerant variety of soybean, *Procedia Chemistry*, 14, 246-255
  8. Indriatmoko, Shioi, Y., **Brotosudarmo, T.H.P.**, Limantara, L. (2015) Separation of photosynthetic pigments by high-performance liquid chromatography: comparison of column performance, mobile phase, and temperature, *Procedia Chemistry*, 14, 202-210
  9. Prilianti, K.R., Setiawan, Y., Indriatmoko, Adhiwibawa, M.A.S., Limantara, L., **Brotosudarmo, T.H.P.** (2014) Probabilistic classification method on multi wavelength chromatographic data for photosynthesis pigments identification, *The American Institute of Physics Conference Proceedings*, 1587, 78, doi: 10.1063/1.4866538
  10. Heriyanto, Michalik, M., **Brotosudarmo, T.H.P.\***, Limantara, L., Fiedor, L. (2014) Reconstitution approach to tune spectral features of light harvesting complexes for improved light absorption and energy transfer, *Energy Procedia*, 47, 113-122
  11. **Brotosudarmo, T.H.P.\***, Prihastyanti, M.N.U., Gardiner, A.T., Carey, A.M., Cogdell, R.J. (2014) The light reactions of photosynthesis as a paradigm for solar fuel production, *Energy Procedia*, 47, 283-289
  12. Prihastyanti, M.N.U., Indriatmoko, **Brotosudarmo, T.H.P.\*** (2014) Photostability assay on light-harvesting complex as a material of biophotovoltaic, *Energy Procedia*, 47, 189-195
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#### D) Perolehan Paten dan Hak Cipta

1. **Brotosudarmo, T.H.P.**, Adhiwibawa, M.A.S., Prilianti, K.R., Putra, E.H.E.: Method in wireless digital image acquisition for prediction of drought tolerant variant of soybean using fuzzy and artificial neural network algorithms. Indonesian Patent Number: IDP000067697, Granted date: 25.02.2020.
2. **Brotosudarmo, T.H.P.**, Adhiwibawa, M.A.S., Prilianti, K.R., Putra, E.H.E. (2015) LCSPM – computer software for quantification of leaf chlorophyll, Indonesia Copyright No. C00201305715
3. **Brotosudarmo, T.H.P.**, Prilianti, K.R., Indriatmoko, Harianto, S. (2014): Sapta Chrom – computer software for identification and verification of photosynthetic pigments using a high-performance liquid chromatography, Indonesia Copyright No. C00201402839
4. **Brotosudarmo, T.H.P.**, Adhiwibawa, M.A.S., Prilianti, K.R. (2013): Mata Daun – mobile application software for measuring chlorophyll and nitrogen content in plant leaves using colour quantification through image digital processing, Indonesia Copyright No. C00201305715

## Portfolio Kedosenan Tatas Hardo Panintingjati Brotosudarmo

### A. Data Dosen

SK. Kemendikbud Terkini	: 101801/A3/KP/2020
SK. Kemendikbudristek Terkini	: 58811/A3/KP.06.00/2021
Jabatan	: Lektor Kepala
Pangkat	: Penata Tingkat I, Golongan III/d
NIDN/No. Registrasi Pendidik	: 0723048102/14107107400053
Nomor Induk Registrasi Asesor (NIRA) BKD	: 211410710740005321944
Pengajaran online di YouTube Channel	: Tatas Brotosudarmo
Website	: <a href="https://www.tatasbrotosudarmo.id/">https://www.tatasbrotosudarmo.id/</a>

### B. Pengalaman Mengajar

#### B.1 Pembimbingan S3

No.	Nama Mahasiswa	Judul TA	Universitas	Tahun Ujian Desertasi	Tahun Lulus
1	Dwi Imam Prayitno	Ekstraksi hijau astaxanthin dari cincalok dengan metode ultrasonikasi, uji stabilitas serta aplikasinya sebagai antioksidan dan tabir surya pada sediaan losion	Universitas Diponegoro	<i>Ujian Proposal tahun 2021</i>	Dalam pelaksanaan S3
2	Kestrialia Rega Prilianti	Soft computing modeling for non-destructive prediction of photosynthetic pigment content in plants  <i>Original Title in Bahasa Indonesia: „Pemodelan soft computing untuk prediksi kandungan pigmen fotosintesis pada tanaman secara non-destruktif“</i>	Universitas Brawijaya	2020	2020

#### B.2 Pembimbingan S2

No.	Nama Mahasiswa	Judul TA	Universitas	Tahun Ujian Tesis	Tahun Lulus
1	Ayu Dita Julia Dinatingtyas	Optimization of culture and pigment analysis of marine bacterium <i>Erytrobacter flavus</i> , a coral symbionts <i>Acropora nasuta</i> , in an exploration	Universitas Diponegoro	2016	2017

		of marine resource utilization  <i>Original Title in Bahasa Indonesia: "Optimasi kultur dan analisis pigmen bakteri laut Erytrobacter flavus simbion karang Acropora nasuta dalam upaya eksplorasi pemanfaatan sumberdaya laut"</i>			
2	Edi Setiyono	Determination of carotenoid pigment compounds in marine bacteria Erytrobacter flavus by LC-MS Multiple Reaction Monitoring (MRM) Analysis  <i>Original Title in Bahasa Indonesia: "Determinasi senyawa pigmen karotenoid pada bakteri laut Erytrobacter flavus dengan LC-MS model Multiple Reaction Monitoring (MRM)"</i>	Universitas Diponegoro	2016	2016

### B.3 Pembimbingan S1 dari Universitas Ma Chung

No.	Nama Mahasiswa	Judul TA	Tahun Ujian TA	Tahun Lulus
1	Mariesccha Rachel Indrianto Putri	Analisis karotenoid dan senyawa metabolik dari pandan laut	2021	2021
2	Ivana Gunawan	Karakterisasi xanton ekstrak kulit manggis hasil ekstraksi DME subkritis dan telaah pustaka enkapsulat xanton	2020	2020
3	Michele Eliona Sena	Kajian pustaka metode inaktivasi <i>Escherichia coli</i> secara fisika, kimia, serta potensi inaktivasi fotodinamik dengan <i>sensitizer</i> turunan klorofil	2020	2020
	Stefani Rebeca	Stabilitas pewarna alami umbi bit pada fermentasi susu kedelai	2020	2020
4	Gita Claudia Kombaitan	Pemanfaatan ampas teh hitam sebagai sumber turunan klorofil untuk inaktivasi <i>Escherichia coli</i> dan <i>Staphylococcus aureus</i> metode fotodinamika	2019	2019
5	Sherly Salsabila Azmi	Pengaruh pengeringan dan metode ekstraksi terhadap senyawa metabolit target dari bunga marigold kultivar mega	2019	2019



		orange menggunakan kromatografi cair dan gas		
6	Melisa Megawati Yusuf	Eksplorasi turunan klorofil dari ampas teh hijau untuk inaktivasi <i>Salmonella typhi</i> dan <i>Listeria monocytogenes</i> dengan metode fotodinamika	2019	2019
7	Jovine Marcella Kurniawan	Karakterisasi dan pengujian stabilitas termal senyawa lutein terenkapsulasi dalam penyalut organik	2019	2019
8	Ratna Yulianti Wijaya	Sintesis dan karakterisasi nanoliposom lutein dari marigold mega orange dan fosfolipid	2018	2018
9	Indra Ajie Gunawan	Identifikasi senyawa karotenoid pada minyak buah merah	2018	2018
10	Arif Agung Wibowo	Stereomutasi dan kestabilan fukosantin terhadap perlakuan termal dan iradiasi dalam pelarut organik dan matriks mesopori silika nanopartikel	2018	2018

#### **B.4 Pembimbingan S1 dari Luar Universitas Ma Chung**

<b>No.</b>	<b>Nama Mahasiswa</b>	<b>Judul Skripsi</b>	<b>Tahun Ujian Skripsi</b>	<b>Tahun Lulus</b>
1	Giovanni	Effect of different drying method to quality and quantity of carotenoid extracted from red melinjo peel ( <i>Gnetum gnemon</i> )	2017	2017
2	Resti Fajriati Amrilla	Penentuan jenis dan aktivitas isolat flavonoid dari ekstrak etanol mesokarp mentimun ( <i>Cucumis sativus L.</i> ) sebagai inhibitor lipase pankreas	2017	2017
3	Novita Indriani Wilujeng	Penentuan jenis dan aktivitas isolat flavonoid dari ekstrak etanol mesokarp semangka ( <i>Citrullus lannatus Thunb.</i> ) sebagai inhibitor lipase pankreas	2017	2017
4	Lilik Zakiyaturrodliyah	Isolasi, Identifikasi, dan uji aktivitas senyawa saponin dalam mesokarp terong ungu ( <i>Solanum melongena L.</i> ) sebagai inhibitor lipase pankreas	2016	2016
5	Mely Wijaya	Isolasi, Identifikasi, dan uji aktivitas senyawa saponin dalam sari mesokarp mentimun ( <i>Cucumis sativus L.</i> ) sebagai inhibitor lipase pankreas	2016	2016
6	Nuril Muhammad	Isolasi, Identifikasi, dan Uji aktivitas Senyawa Flavonoid dalam Kedelai sebagai Inhibitor Lipase Pankreas.	2016	2016

7	Pancasari Wijutami	Isolasi, identifikasi, dan uji aktivitas senyawa flavonoid dari biji pepaya ( <i>Carica papaya L.</i> ) sebagai inhibitor lipase pankreas	2016	2016
8	Rike Elvira	Isolasi, Identifikasi, dan Uji aktivitas Senyawa Flavonoid dalam mesokarp semangka ( <i>Citrullus lannatus Thunb.</i> ) sebagai inhibitor lipase pankreas	2016	2016

### B.5 Mata Kuliah Diampu

No.	Nama Mata Kuliah	Tahun Ajaran	Semester	SKS
1	Analisis Instrumentasi 1	2021/2022	Gasal	1
	Biokimia	2021/2022	Gasal	1
2	Analisis Instrumentasi 2	2020/2021	Genap	1
	Kimia Bahan Alam	2020/2021	Genap	1
	Biokimia Pangan	2020/2021	Genap	1
3	Analisis Instrumentasi 1	2020/2021	Gasal	1
	Biokimia	2020/2021	Gasal	1
4	Kimia Bahan Alam	2019/2020	Genap	1
	Analisis Instrumentasi 2	2019/2020	Genap	1
	Biokimia Pangan	2019/2020	Genap	1
5	Biokimia	2019/2020	Gasal	1
	Praktikum Biokimia	2019/2020	Gasal	2
	Sintesis Senyawa Organik dan Elusidasi Struktur	2019/2020	Gasal	1.5
	Metabolomik Pangan	2019/2020	Gasal	2
	Analisis Instrumentasi 1	2019/2020	Gasal	2
6	Kimia Bahan Alam	2018/2019	Genap	2
	Biokimia Pangan	2018/2019	Genap	1
	Praktikum Analisis Instrumentasi 2	2018/2019	Genap	2
7	Analisis Instrumentasi 1	2018/2019	Ganjil	1
	Biokimia	2018/2019	Ganjil	2
	Manajemen Inovasi dan Hak Kekayaan Intelektual	2018/2019	Ganjil	1
	Metabolomik Pangan	2018/2019	Ganjil	8
8	Manajemen Inovasi SDA	2017/2018	Genap	1
	Kimia Organik 2	2017/2018	Genap	1.5
	Inovasi dan Teknologi Transfer	2017/2018	Genap	1
	Kimia Bahan Alam	2017/2018	Genap	3
9	Analisis Instrumentasi 1	2017/2018	Ganjil	1
	Praktikum Analisis Instrumentasi 2	2017/2018	Ganjil	1.5
	Biokimia	2017/2018	Ganjil	2
	Pangan Fungsional dan Nutrasetikal	2017/2018	Ganjil	1.5
	Analisis Pangan	2017/2018	Ganjil	1
10	Inovasi & Teknologi Transfer	2016/2017	Genap	2
	Kimia Organik 2	2016/2017	Genap	1.5
	Praktikum Kimia Organik 2	2016/2017	Genap	1.33

	Kimia Bahan Alam	2016/2017	Genap	1.5
	Manajemen SDA	2016/2017	Genap	1.5
	Praktek Kimia Pangan	2016/2017	Genap	1
11	Kimia Organik 1	2016/2017	Ganjil	1
	Analisis Instrumentasi 1	2016/2017	Ganjil	1
	Praktikum Analisis Instrumentasi 2	2016/2017	Ganjil	1
	Biokimia	2016/2017	Ganjil	1
	Praktikum Biokimia	2016/2017	Ganjil	1
12	Kimia Organik 2	2015/2016	Genap	1.5
	Praktikum Kimia Organik	2015/2016	Genap	4
	Inovasi dan Teknologi Transfer	2015/2016	Genap	2
13	Kimia Organik 1	2015/2016	Gasal	3
	Kimia Anorganik 1	2015/2016	Gasal	1
	Analisis Instrumentasi 1	2015/2016	Gasal	2
	Praktikum Analisis Instrumentasi	2015/2016	Gasal	1.333
	Kimia Organik 2	2015/2016	Gasal	0.5
	Biokimia	2015/2016	Gasal	0.5