

### เอกสารแนบ 13

คุณวุฒิ ผลงานทางวิชาการ และประสบการณ์ด้านการทำวิจัย ของ รศ.ดร.นฤมล มาแทน

#### SHORT CURRICULUM VITAE

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Present position: Associate Professor  
 Lecturer (Food Technology),  
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#### Educational qualifications:

Degree	Field	Institution
Ph.D.	Agro-Industrial Product Development	Kasetsart University, THAILAND
M.Sc.	Agro-Industrial Product Development	Kasetsart University, THAILAND
B.Sc.	Microbiology	King Mongkut's University of Technology Thonburi, THAILAND

#### Present research/professional speciality: Food Safety, Essential Oil Technology

Projects	Granting agency	Year	Status
1) Product development of Leb Mu Nang yam with Konjac flour	School of Agricultural Technology, Walailak University	2000-2001	Principal investigator
2) Utilization of edible film of sago starch as antifungi in durian paste	Institute of Research and Development, Walailak University	2001-2002	Principal investigator
3) Utilization of cinnamon oil and clove oil as antifungal on rambutan surface	National Science and Technology Development Agency (NSTDA)	2006-2007	Principal investigator
4) Process development of high quality semi-dried fish using microwave technology	Upper Southern Research Network	2007-2008	Principal investigator
5) Antifungal and termite resistance of natural compounds on rubberwood	The Thailand Research Fund	2007-2008	Principal investigator
6) Utilization of essential oil as antifungal agents on Rubberwood surface	Walailak University	2007-2008	Principal investigator
7) Development of natural packaging to extend the shelf life of fruits paste	Walailak University	2008-2009	Principal investigator

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8) Process development of high quality semi-dried fish using microwave technology	Upper Southern Research Network	2007-2008	Principal investigator
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10) Utilization of essential oil as antifungal agents on Rubberwood surface	Walailak University	2007-2008	Principal investigator
11) Development of natural packaging to extend the shelf life of fruits paste	Walailak University	2008-2009	Principal investigator
12) Development of electrolyzed water incorporated with natural compounds as an antibacterial agent for fresh chicken meat washing	The Thailand Research Fund	2008-2009	Principal investigator
13) Development of semi-automatic fish drying system by using microwave field for Thasong village, Thasala district, Nakon Si Thammarat	National Research Council of Thailand	2007-2009	Co-investigator
14) Process development of an environmentally friendly rubberwood lumber by incorporating with essential oils to protect against the attacks of fungi and termite	Walailak University	2009-2010	Co-investigator
15) Process development of high quality semi-dried fish using microwave technology	Thailand Center of Excellence in Physics	2008-2010	Co-investigator
16) Development of antifungal cellulose materials for packaging applications using cold atmospheric plasmas with essential oils	Thailand Center of Excellence in Physics	2011-2013	Principal investigator
17) Development of antifungal packaging for fruit pastes from natural cellulose materials	The Thailand Research Fund / The Office of the Higher Education Commission/ Walailak University	2011-2013	Principal investigator

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18) Enhancement of antifungal activity of essential oil on the surface of biodegradable cellulose based food packaging	S & T Research Grants, Thailand Toray Science Foundation	2011-2012	Principal investigator
19) Development of antifungal biodegradable packaging from an areca palm leaf sheath ( <i>Areca catechu</i> ) treated with extract from spent coffee grounds	The Office of the Higher Education Commission	2013-2014	Principal investigator
20) Primary GMP	Ministry of Public Health	2013-2014	Principal investigator
21) Application of essential oil as antifungal on surface of biodegradable cellulose based food packaging from bamboo fiber	The Royal Golden Jubilee Ph.D. Program / The Thailand Research Fund	2013-2017	Principal investigator
22) Application of natural oleoresin with essential oils against molds on rubberwood peeler core for a construction of log cabin	The Thailand Research Fund	2012-2014	Co-investigator
23) Development of biodegradable cellulose based food packaging from bamboo fiber	Walailak University	2014-2015	Principal investigator
24) Development of essential oil fragrant rubberwood for a production of healthy antifungal wood products	The Thailand Research Fund	2015-2016	Principal investigator
25) Development of antifungal paper prepared from roots of water hyacinth mixed with natural essential oil vapors for extending the shelf-life of unhusked rice and brown rice	The Royal Golden Jubilee Ph.D. Program / The Thailand Research Fund	2015-2019	Principal investigator

### **Selected Publications**

- Sopa Jantamas, **Narumol Matan**, Nirundorn Matan, Tanong Aewsiri. 2016. Improvement of antifungal activity of citronella oil against *Aspergillus flavus* on rubberwood (*Hevea brasiliensis*) using heat curing. *Journal of Tropical Forest Science* 28(1):69-7. (ISI: Impact factor: 0.537)
- Kanockwan Puangjinda, **Narumol Matan**, Mudtorlep Nisoa. 2016. Effects atmospheric radio-frequency plasma treatment on popping characteristics of popped rice and its nutritional evaluation. *Innovative Food Science and Emerging Technologies* 35:119-124. (ISI: Impact factor: 3.273)
- Sumethee Songsamoe, **Narumol Matan**, Nirundorn Matan. 2016. Effect of UV-C radiation and vapor released from a water hyacinth root absorbent containing bergamot oil to control mold on storage of brown rice. *Journal of Food Science and Technology* 53(3):1445-1453. (ISI: Impact factor: 2.203)
- Narumol Matan**, Kanockwan Puangjinda, Saifon Phothisuwan, Mudtorlep Nisoa. 2015. Combined antibacterial activity of green tea extract with atmospheric radio-frequency plasma against pathogens on fresh-cut dragon fruit. *Food Control* 50:291-296. (ISI: Impact factor: 3.006)
- Kitiya Suhem, **Narumol Matan**, Nirundorn Matan, Sorasak Danworaphong, Tanong Aewsiri. 2015. Improvement of the antifungal activity of *Litsea cubeba* vapor by using a helium-neon (HeNe) laser against *Aspergillus flavus* on brown rice snack bars. *International Journal of Food Microbiology* 215: 157-160. (ISI: Impact factor: 3.082)
- Wissanee Yingprasert, **Narumol Matan**, Nirundorn Matan. 2015. Effects of surface treatment with cinnamon oil and clove oil on mold resistance and physical properties of rubberwood particleboards. *European Journal of Wood and Wood Products* 73(1):103-109. (ISI: Impact factor: 1.105)
- Wissanee Yingprasert, **Narumol Matan**, Pannipa Chaowana, Nirundorn Matan. 2015. Fungal resistance and physico-mechanical properties of cinnamon oil and clove oil treated rubberwood particleboards. *Journal of Tropical Forest Science* 27(1):69-79. (ISI: Impact factor: 0.537)
- Athiya Nonthakaew, **Narumol Matan**, Tanong Aewsiri, Nirundorn Matan. 2015. Antifungal activity of crude extracts of coffee and spent coffee ground on areca palm leaf sheath (*Areca catechu*) based food packaging. *Packaging Technology and Science* 28: 633-645. (ISI: Impact factor: 1.584)
- Narumol Matan**, Nirundorn Matan, Mudtorlep Nisoa. 2014. Antibacterial activity of essential oils and their main components enhanced by atmospheric RF plasma. *Food Control* 39:97-99. (ISI: Impact factor: 3.006)
- Narumol Matan**, Nirundorn Matan, Mudtorlep Nisoa, Tanong Aewsiri. 2014. Effect of cold atmospheric plasma on antifungal activities of clove oil and eugenol against molds on areca palm (*Areca catechu*) leaf sheath. *International Biodeterioration & Biodegradation* 86:196-201. (ISI: Impact factor: 2.059)
- Narumol Matan**, Nirundorn Matan, Saichol Ketsa. 2013. Enhanced inhibition of *Aspergillus niger* on sedge (*Lepironia articulata*) treated with heat-cured lime oil. *Journal of Applied Microbiology* 115:376-378. (ISI: Impact factor: 2.196)

- Kitiya Suhem, **Narumol Matan**, Mudtorlep Nisoa, Nirundorn Matan. 2013. Low pressure RF plasma effects on the mould control, physical quality, nutritional value, mineral content and trace element content of a brown rice snack bar. *Journal of Food and Nutrition Research* 52(2):87-94. (ISI: Impact factor: 0.600)
- Kitiya Suhem, **Narumol Matan**, Mudtorlep Nisoa, Nirundorn Matan. 2013. Inhibition of *Aspergillus flavus* on agar media and brown rice cereal bars using cold atmospheric plasma treatment. *International Journal of Food Microbiology* 106: 107-111. (ISI: Impact factor: 3.425)
- Thitikul Parkkeeree, Nirundorn Matan, **Narumol Matan**, Buhnnum Kyokong. 2013. Flattening and fixation processes of bamboo boards from half tubular culm sections. *Journal of Tropical Forest Science* 26 (1): 101-114. (ISI: Impact factor: 0.537)
- Warasri Saengkrajang, **Narumol Matan**, Nirundorn Matan. 2013. Nutritional composition of the farmed edible bird's nest (*Collocalia fuciphaga*) in Thailand. *Journal of Food Composition and Analysis* 31: 41-45. (ISI: Impact factor: 2.088)
- Taweessin Wongprot, Nirundorn Matan, **Narumol Matan**, Wanchart Preechatiwong, Buhnnum Kyokong. 2013. Response surface modeling of hydrothermal treatment conditions on color changes, strength, and durability properties of rubberwood. *BioResources* 8(1): 302-312. (ISI: Impact factor: 1.309)
- Narumol Matan**, Nirundorn Matan, Saichol Ketsa. 2012. Effect of heat curing on antifungal activities of anise oil and garlic oil against *Aspergillus niger* on rubberwood. *International Biodeterioration & Biodegradation* 75:150-157. (ISI: Impact factor: 2.235)
- Narumol Matan**, Nirundorn Matan. 2012. Waterborne paints modified with essential oils as bio-protective coatings for rubberwood. *Journal of Tropical Forest Science* 24(4): 528-537. (ISI: Impact factor: 0.537)
- Narumol Matan**, Warasri Saengkrajang, Nirundorn Matan. 2011. Antifungal activities of essential oils applied by dip-treatment on areca palm (*Areca catechu*) leaf sheath and persistence of their potency upon storage. *International Biodeterioration & Biodegradation* 65:212-216. (ISI: Impact factor: 2.059)
- Narumol Matan**, Weerapong Woraprayote, Warasri Saengkrajang, Niphaphorn Sirisombat Nirundorn Matan. 2009. Durability of rubberwood (*Hevea brasiliensis*) treated with peppermint oil, eucalyptus oil and their main components. *International Biodeterioration & Biodegradation* 63(5):621-625. (ISI: Impact factor: 2.059)
- Narumol Matan**, Nirundorn Matan. 2008. Antifungal activities of anise oil, lime oil and tangerine oil against molds on rubberwood (*Hevea brasiliensis*). *International Biodeterioration & Biodegradation* 62(1):75-78. (ISI: Impact factor: 2.059)
- Narumol Matan**. 2008. Control of *Aspergillus niger* growth on the surface of tomatoes by cinnamon oil and clove oil. *Food New Zealand* 8(2): 44-47.
- Narumol Matan**, Hathairat Rimkeeree, Andrew John Mawson, Penkwan Chompreeda, Vichai Haruthaithanasan, Michael Parker. 2006. Antimicrobial activity of cinnamon and clove oils under modified atmosphere conditions. *International Journal of Food Microbiology* 107(2):180-185. (ISI: Impact factor: 3.425)

#### **Selected Conference Papers**

- Narumol Matan**, Mudtorlep Nisoa. 2016. Effects of atmospheric radio-frequency (RF) plasma on mold spoilage, color, nutritional value, and mineral content of the whole grain brown rice. International Conference on Advances in Human Nutrition, Food Science & Technology, 26<sup>th</sup>-27<sup>th</sup> June, Toronto, Canada (Oral).
- Narumol Matan**, Sumethee Songsamoe, Athiya Nonthakaew. 2015. Antifungal plant packaging paper prepared from water hyacinth roots mixed with *Michelia alba* for extending the shelf-life of unhusked rice. Innovation in Food Packaging Shelf Life and Food Safety, 15<sup>th</sup>-17<sup>th</sup> September, Munich, Germany (Oral).
- Kitiya Suhem, **Narumol Matan**, Nirundorn Matan. 2015. Antifungal activity of bamboo-based food packaging treated with high temperature in volatile *Litsea cubeba* oil atmospheres. NZIFST 50<sup>th</sup> Anniversary Conference 2015, 30<sup>th</sup> June -2<sup>nd</sup> July, Palmerston North, New Zealand (Poster).
- Athiya Nonthakaew, **Narumol Matan**, Tanong Aewsiri, Nirundorn Matan. 2013. In vitro antifungal activity of Robusta coffee ground extract against *Aspergillus flavus*, *Penicillium* sp. and *Rhizopus* sp. The 2<sup>nd</sup> IFSAC 2013 International Food Safety Conference, 2<sup>nd</sup>-3<sup>rd</sup> December, Kuala Lumpur, Malaysia (Oral).
- Sopa Jantamas, **Narumol Matan**, Nirundorn Matan. 2013. Combined effects of using citronella oil and temperature on the antifungal activities of rubberwood. The 2<sup>nd</sup> Malaysia-Thailand Graduate Forum in Life Science, Food Science and Agriculture (MTG), 3<sup>rd</sup>-7<sup>th</sup> December, Kuala Lumpur, Malaysia (Oral).
- Athiya Nonthakaew, **Narumol Matan**, Tanong Aewsiri, Nirundorn Matan. 2013. Antifungal activity of *Cassia alata* leaf extract from Thailand against *Aspergillus flavus*. The 13<sup>th</sup> ASEAN Food Conference, 9-11 September, Singapore (Oral).
- Mudtorlep Nisoa, **Narumol Matan**, Nirundorn Matan. 2013. Enhancement of antifungal activity by using essential oil and atmospheric RF plasma on the surface of cellulose based food packaging. The 3<sup>rd</sup> International on Plasma Bio-Science 2013 (ISPB2013), JeJu Island, South Korea (Oral).
- Saifon Phothisuwan, **Narumol Matan**, Nirundorn Matan. 2013. Efficacy of edible film incorporated with essential oils against white-rot decay Fungus (*Trametes versicolor*). The 2<sup>nd</sup> Journal Conference on Environmental Science and Development (JCESD 2013), 8<sup>th</sup>-9<sup>th</sup> June Kuala Lumpur, Malaysia (Oral).
- Sopa Jantamas, **Narumol Matan**, Nirundorn Matan. 2013. Effect of tangerine oil against *Aspergillus niger* identified from raw and boron treated rubberwood. The 2<sup>nd</sup> Journal Conference on Environmental Science and Development (JCESD 2013), 8<sup>th</sup>-9<sup>th</sup> June, Kuala Lumpur, Malaysia (Oral).
- Narumol Matan**, Mudtorlep Nisoa, Nirundorn Matan. 2012. Enhancement in antibacterial activity of essential oil using atmospheric pressure plasma. II International conference on antimicrobial research, 21<sup>th</sup>-23<sup>th</sup> November, Lisbon, Portugal (Oral).

- Narumol Matan**, Mudtorlep Nisoa, Nirundorn Matan. 2012. Antifungal activity of an areca palm (*Areca Catechu*) leaf sheath treated with low pressure RF plasma in volatile clove oil atmospheres. European Symposium on Food Safety, 21<sup>th</sup>-23<sup>th</sup> May Warsaw, Poland (Poster).
- Kitiya Suhem, **Narumol Matan**, Mudtorlep Nisoa, Nirundorn Matan 2012. The impact of a rice breakfast on the body mass index and grade point average of primary school children in Thailand. International Conference on Food Science and Nutrition, 1<sup>st</sup>-4<sup>th</sup> April Kota Kinabalu, Sabah, Malaysia (Oral).
- Narumol Matan**, Nirundorn Matan. 2010. Application of hand spray using peppermint oil against *Aspergillus niger* on rubberwood. International Conference on Antimicrobial Research, 3<sup>th</sup>-5<sup>th</sup> November, Valladolid, Spain (Oral).
- Narumol Matan**, Hathairat Rimkeeree, Andrew John Mawson, Penkwan Chompreeda, Vichai Haruthaithanasan, Michael Parker. 2005. Combined effects of essential oil volatiles, water activity and modified atmosphere on growth of *Aspergillus flavus* on fruitcake. NZIFST Annual Conference 2005 "Going Global – food on the move, 28<sup>th</sup>-30<sup>th</sup> June Christchurch, New Zealand (Oral).

#### **Books**

- Narumol Matan**, Nirundorn Matan, Saichol Ketsa. 2013. Inhibitory effect of garlic oil against *Aspergillus niger* on rubberwood (*Hevea brasiliensis*) page 176-180. Worldwide Research Efforts in the Fighting against Microbial Pathogens: From Basic Research to Technological Developments Publisher: BrownWalker Press, Editor: A. Mendez-Vilas. (ISBN-13: 978-1-61233-636-7).
- Narumol Matan**. 2011. Shelf-life extension of semi-dried fish Nile Tilapia (*Oreochromis niloticus*) by ultraviolet and infrared irradiations. *Science and Technology against Microbial Pathogens* page 254-258. Science and Technology against Microbial Pathogens. Publisher: BrownWalker Press, Editor: A. Mendez-Vilas. (ISBN: 978-981-4354-85-1).

#### **Academic Award**

- Narumol Matan**, Sumethee Songsamoe, Athiya Nonthakaew 2016. Best poster presentation award. HERP Congress IV, 8-10 February 2016 Ubon Ratchathani, Thailand.
- Narumol Matan**, Sopa Jantamas, Saifon Phothisuwan, Kitiya Suhem, Sumethee Songsamoe 2015 ITEX Gold Medal for the invention "Long-lasting fragrant rubberwood" The 26<sup>th</sup> International Invention, Innovation & Technology Exhibition ITEX2015, 21-23 May 2015, Kuala Lumpur, Malaysia.
- Narumol Matan**. 2012. Science and Technology Awards for researchers. The 19<sup>th</sup> Thailand Toray Science Foundation Award in 2012.
- Narumol Matan**. 2013. Best poster presentation award. Development of antifungal packaging for fruit pastes from natural cellulose materials. TRF Annual Conference 2013 "TRF Senior Research Scholars meet New Researcher" The Regents Cha-Um Hotel, Cha-Um. 16-18 October 2013.

- Saifon Phothisuwan, Narumol Matan, Nirundorn Matan.** 2013. Best oral presentation award. Efficacy of edible film incorporated with essential oils against white-rot decay Fungus (*Trametes versicolor*). 2<sup>nd</sup> Journal Conference on Environmental Science and Development (JCESD 2013). Kuala Lumpur, Malaysia, 8-9 June.
- Narumol Matan.** 1999. Award of Kasetsart Thesis, as the best overall thesis. Utilization of Cinnamon oil as Antifungi in Durian Paste in 1999.
- Narumol Matan.** 2008. Best poster presentation award. Postharvest control of mould growth on rambutan by combination of cinnamon oil and clove oil. *The 7th National Horticultural Congress 2008*, Phitsanonok, Thailand 26-30 May.

**Reviewer for journals (from 2010 to present)**

Innovative Food Science and Emerging Technologies  
 Journal of Tropical Forest Science  
 Journal of Agricultural and Food Chemistry  
 Food Control  
 European Journal of Wood and Wood Products  
 International Food Research Journal  
 Croatian Journal of Food Technology Biotechnology and Nutrition  
 International Journal of Microbiology Research and  
 Journal of Food and Nutrition Research  
 International Journal of Medicinal Plant Research  
 BioResources  
 International Biodeterioration & Biodegradation  
 Industrial Microbiology & Biotechnology  
 Journal of Food Biochemistry  
 Journal of Wood Chemistry and Technology  
 Chiang Mai Journal of Science  
 British Biotechnology  
 Journal of Food Processing & Technology  
 Food Science and Technology International  
 Walailak Journal of Science and Technology  
 KMITL Science and Technology Journal  
 Molecules  
 Engineering Journal  
 Journal of Agricultural Science and Technology  
 Journal of Food Engineering  
 CyTA-Journal of Food  
 Journal of the Science of Food and Agriculture  
 Meat Science