# APPENDIX A

## Standard Curve of Pesticides

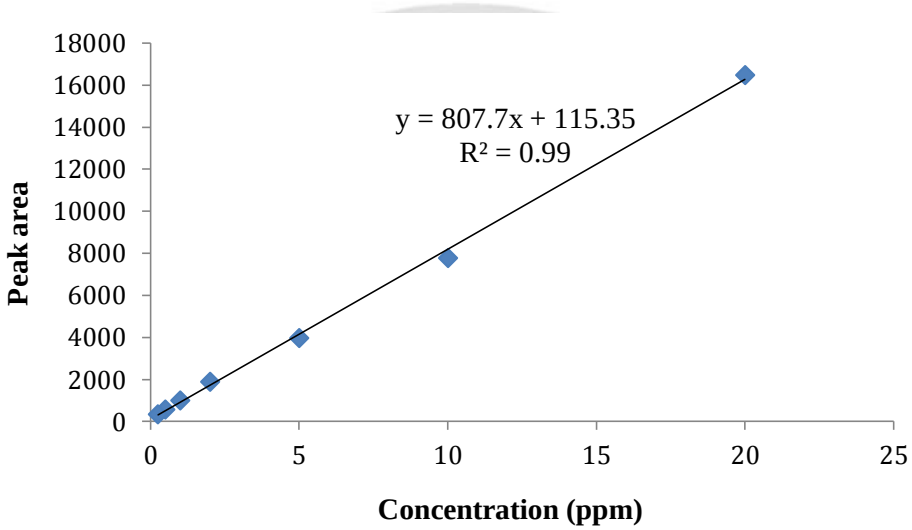


**Figure A-1** Standard curve of chlorpyrifos

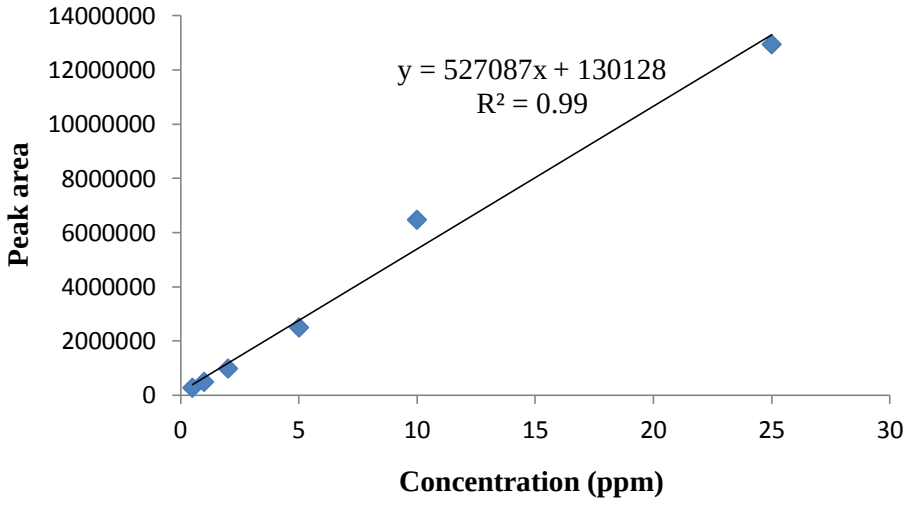


**Figure A-2** Standard curve of cypermethrin

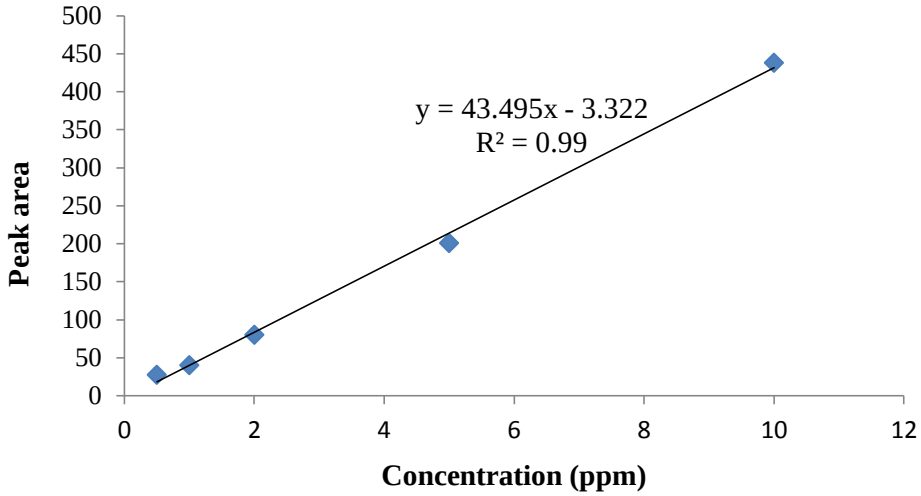


**Figure A-3** Standard curve of carbendazim

# APPENDIX B

# PREVIOUS DESIGN OF NTP SYSTEM

Before successfully applying GA discharge system to produce NTP, cold plasma generated in sodium bicarbonate ($NaHCO_3$) solution (Figure B-1) was used to test the effect of this technique on quality attributes of Nam Dok Mai mango fruits.

The design of NTP discharged in $NaHCO_3$ solution included four major parts which were (1) Non-thermal plasma discharge bath, (2) high-voltage power supply, (3) electrical parameter measurement and (4) control devices. Sodium bicarbonate ($NaHCO_3$) solution (0.05 %) was prepared and filled as solution plasma for increasing electrical conductivity of solution (550 μS/cm). The high conductivity of solution is required for the discharge generation in liquid. Plasma was generated in the solution by applying 426 ns wide of pulse and 50 kHz electric field with different voltage levels through the electrode. The plasma source utilized was a power systems DC generator (DCG-100E, ENI Power Systems). Temperature of plasma solution before and after plasma treatment was ranged from 28 to 45ºC. Increase of temperature was observed by either higher applied voltage or longer treatment duration.

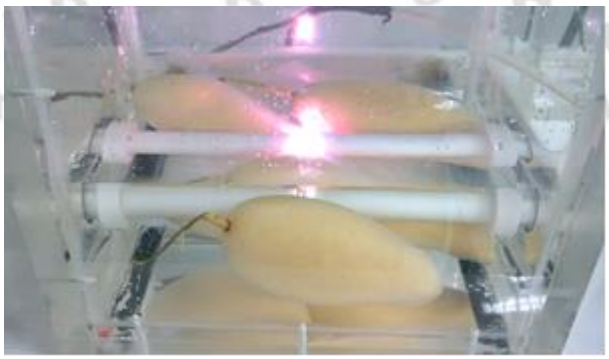

**Figure B-1** Mango treated NTP discharged in $NaHCO_3$ solution

Mango fruits were placed directly in the NTP bath (3 fruits per 3000 mL solution for each treatment), then different levels of high-voltage power (ranged from 800 to

1500 V) were supplied between 2 and 10 min. After NTP treatments, the mango samples were recovered and taken for physicochemical properties measurements.

It was found that there were significant decreases ($p \leq 0.05$) in titratable acidity and total phenolic content of NTP treated mango, while the total soluble solid showed a significant increase ($p \leq 0.05$). The color and texture parameters of this fruit with NTP treatments were not significantly different ($p > 0.05$). The results demonstrated that NTP had slight effect on the physicochemical properties of Nam Dok Mai mango.

# CURRICULUM VITAE

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|---|---|---|
| Author's Name | Ms. Phan Thi Kim Khanh | |
| Date/Year of Birth | October, 24th 1990 | |
| Place of Birth | Ho Chi Minh City, Vietnam | |
| Education | 2012 | Bachelor's Degree in Chemical Engineering, Nong Lam University – Ho Chi Minh City, Vietnam |
| | 2014 | Bachelor's Degree in English Linguistics and Literature, University of Social Sciences and Humanities, Vietnam National University - HCMC |
| Publications | Phan, T. K. K., Phan, T. H., Uthaichana, K., and Phimolsiripol, Y. (2017). Effect of non-thermal plasma on physicochemical properties of Nam Dok Mai mango. *International Journal on Advanced Science, Engineering and Information Technology*, *7*(1), 263-268. | |
| | Phan, T. H., and Phan, T. K. K. (2014). Supercritical carbon dioxide extraction of Gac oil. *The Journal of Supercritical Fluids*, *95*, 567-571. | |