

## Suwussa Bamrungsap, Ph.D.

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### **Employment:**

2011-Present : Researcher at Nanodiagnostics device (NDx) research team, National Nanotechnology Center, Thailand

### **Awards:**

2020 : L'Oréal Thailand's 'For Women in Science 2020' in Life Science

2018 : DMSc medical research award from Department of Medical Sciences, Ministry of public health

2017 : Poster award in The 1st MRS Thailand Conference, 2017, Chiang Mai

2016 : Dissertation award from The National Research Council of Thailand (NRCT)

2012 : Poster award in Nanobiotechnology, IUMRS-ICYRAM 2012, Singapore

2011 : Graduate Student Travel Funds, University of Florida, USA

2006-2011 : Scholarship from National Nanotechnology Center, Thailand, The Royal Thai Government, Thailand

1995-2006 : Scholarship from the Development and Promotion of Science and Technology Talent Projects (DPST), The Royal Thai Government, Thailand

### **Education:**

2006-2011 : **Ph.D.** (Physical Chemistry), University of Florida, FL, USA

2003-2006 : **M.Sc.** (Physical Chemistry), Kasetsart University, Thailand

1999-2003 : **B.Sc.** (Chemistry, Honors), Kasetsart University, Thailand

### **Fields of Expertise:**

- Nanoparticle synthesis and bioconjugation for biosensors
- Diagnostic and therapeutic platforms based on bioconjugated nanomaterials
- Surface enhance Raman scattering (SERS), fluorescence, and colorimetric biosensors for medical diagnostic
- Magnetic Relaxation Switches technique for biosensors

## Publications:

1. Ponlamuangdee K, Hornyak G L, Bora T, **Bamrungsap S\*** (2020) Graphene oxide/gold nanorod plasmonic paper - a simple and cost effective SERS substrate for anticancer drug analysis. *New J. Chem.* 44, 14087-14094.
2. Sansanaphongpricha K\*, Sonthithai P, Kaewkong P, Thavornnyutikarn B, **Bamrungsap S**, Kosorn W, Thinbanmai T, Saengkrit N (2020) Hyaluronic Acid-coated Gold Nanorods Enhancing BMP-2 Peptide Delivery for Chondrogenesis. *Nanotechnology* 31, 435101 (13pp).
3. Reokrungruang P, Chatnuntawech I, Dharakul T, **Bamrungsap S\*** (2019) A simple paper-based surface enhanced Raman scattering (SERS) platform and magnetic separation for cancer screening. *Sensors & Actuator B*, 285, 462-469.
4. **Bamrungsap S**, Cherngsuwanwong J, Srisurat P, Chonirat J, Sangsing N, Wiriyaichaiyorn N\* (2019) Visual colorimetric sensing system based on self-assembly of gold nanorods and graphene oxides for heparin detection using polycationic polymer as a molecular probe. *Anal. Methods*, 11, 1387-1392.
5. Wiriyaichaiyorn N, Srisurat P, Cherngsuwanwong J, Sangsing N, Chonirat J, Attavitaya S, **Bamrungsap S\*** (2019) A colorimetric sensor for protamine detection based on the self-assembly of gold nanorods on graphene oxide. *New J. Chem.*, 43, 8502-8507.
6. Treerattrakoon K, Chanthima W, Apiwat C, Dharakul T, **Bamrungsap S\*** (2017) Oriented conjugation of antibodies against epithelial cell adhesion molecule on fluorescently doped silica nanoparticles for flow-cytometric determination and in vivo imaging of EpCAM, a biomarker for colorectal cancer. *Microchim. Acta*, 184, 1941-1950.
7. Karn-orachai K, Sakamoto K, Laocharoensuk R, **Bamrungsap S**, Dharakul T, Miki K\* (2017) SERS-based immunoassay on 2D-arrays of Au@Ag core-shell nanoparticles: influence of the sizes of the SERS probe and sandwich immunocomplex on the sensitivity. *RSC Advances*, 7, 14099-14106.
8. Maneepprakorn W\*, **Bamrungsap S**, Apiwat C, Wiriyaichaiyorn N (2016) Surface-enhanced Raman scattering based lateral flow immunochromatographic assay for sensitive influenza detection. *RSC Advances*, 6, 112079-112085.
9. Karn-orachai K, Sakamoto K, Laocharoensuk R, **Bamrungsap S**, Songsivilai S, Dharakul T, Miki K\* (2016) Extrinsic surface-enhanced Raman scattering detection of influenza A virus enhanced by two dimensional gold@silver core-shell nanoparticle arrays. *RSC Advances*, 6, 97791-97799.
10. **Bamrungsap S\***, Treetong A, Apiwat C, Wuttikhun T, and Dharakul T. (2016) SERS-fluorescence dual mode nanotags for cervical cancer detection using aptamers conjugated to gold-silver nanorods. *Microchim. Acta*, 183, 249-256.
11. **Bamrungsap S**, Apiwat C, Chantima W, Dharakul T, Wiriyaichaiyorn N\*. (2014) Rapid and sensitive lateral flow immunoassay for influenza antigen using fluorescently-doped silica nanoparticles. *Microchim. Acta*, 181, 223-230.

12. **Bamrungsap S**, Zhao Z, Chen T, Wang L, Li C, Fu T, and Tan W\*. (2012) Nanotechnology in therapeutics: a focus on nanoparticles as a drug delivery system. *Nanomedicine*, 7, 1253-1271.
13. **Bamrungsap S**, Chen T, Shukoor M I, Chen Z, Sefah K, Chen Y, and Tan W\* (2012) Pattern recognition of cancer cells using aptamer-conjugated magnetic nanoparticles. *ACS Nano*, 6, 3974–3981.
14. **Bamrungsap S**, Shukoor M I, Chen T, Sefah K, and Tan W\* (2011) Magnetic relaxation switches (MRSw) detection of lysozyme based on aptamer functionalized superparamagnetic nanoparticles. *Anal. Chem.*, 83, 7795-7799.
15. **Bamrungsap S**, Phillips J A, Xiong X, Kim Y, Wang H, Liu H, Hebard A, and Tan W\* (2011) Magnetically driven single DNA nanomotor. *Small*, 7, 601-605.
16. Medley C D, **Bamrungsap S**, Tan W, and Smith J E\* (2011) Aptamer-conjugated nanoparticles for cancer cell detection. *Anal. Chem.*, 83, 3727-734.
17. Chen T, Shukoor M I, Wang R, Zhao Z, Yuan Q, **Bamrungsap S**, Xiong X, Tan W\* (2011) Smart multifunctional nanostructure for targeted cancer chemotherapy and magnetic resonance imaging. *ACS NANO*, 5, 7866-7873.
18. Huang J, Zhu Z, **Bamrungsap S**, Zhu G, You M, He X, Wang K, and Tan W\* (2010) Competition-Mediated Pyrene-Switching Aptasensor: Probing Lysozyme in Human Serum with a Monomer-Excimer Fluorescence Switch. *Anal. Chem.*, 2010, 82, 10158-63.
19. Tallury P, Kar S, **Bamrungsap S**, Huang Y F, Tan W, and Santra S\* (2009) Ultra-small water-dispersible fluorescent chitosan nanoparticles: Synthesis, characterization and specific targeting. *Chem. Comm.*, 17, 2347-9.
20. Wang H, Kim Y, Liu H, Zhu Z, **Bamrungsap S**, and Tan W\* (2009) Engineering a unimolecular DNA-catalytic probe for single lead ion monitoring. *JACS*, 131, 8221-8226.
21. Huang Y, Sefah K, **Bamrungsap S**, Chang H, and Tan W\* (2008) Selective photothermal therapy for mixed cancer cells using aptamer-conjugated nanorods. *Langmuir*, 24, 11860-11865.
22. Medley C D, Smith J E, Tang Z, Wu Y, **Bamrungsap S**, and Tan W\* (2008) Gold nanoparticle-based colorimetric assay for the direct detection of cancerous cells. *Anal. Chem.*, 80, 1067-1072.