

Curriculum Vitae

Name: Supagorn Rugmai

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Current Positions

2020-Present Assistant Director for Academic Affairs,
Head of Research Facility Division
Synchrotron Light Research Institute (Public Organization)

2011-Present Beamline Scientist
Synchrotron Light Research Institute (Public Organization)

Academic Experience

2011-Present Beamline Scientist
Synchrotron Light Research Institute (Public Organization)

1999-2011 Accelerator Physicist
Synchrotron Light Research Institute (Public Organization)

2000-2012: Assistant Professor
School of Physics, Suranaree University of Technology

1999-2000 Lecturer
School of Physics, Suranaree University of Technology

2008: Postdoctoral Research Fellow : Pohang Accelerator Laboratory,
Korea

2000: Postdoctoral Research Fellow : SPring-8, Japan

1998: Postdoctoral Research Fellow : School of Physical Sciences,
University of Surrey, United Kingdom

Administrative Experience

Head of Research Facility Division
Beamline Manager (Small/Wide Angle X-ray Scattering)
Head of Engineering Support Division
Head of Accelerator Technology Division
Head of Insertion Device Section
Head of Safety Section
Synchrotron Light Research Institute (Public Organization)

Education

- 1998 : Ph.D. (Physics)
University of Surrey, United Kingdom
- 1994 : B.Sc. (Physics)
Prince of Songkhla University, Thailand.

Expertise

Synchrotron Science, X-ray Scattering, Nano Structural Characterization, Few-body Nuclear Scattering, Python Programing, Matlab Programing

Publications

- Investigation into poloxamer 188-based cubosomes as a polymeric carrier for poor water-soluble actives*
Swanya Yakaew, Kunlathida Luangpradikun, Preeyawass Phimnuan, Nitra Nuengchamnon, Nuntaporn Kamonsutthipajit, Supagorn Rugmai, Wongnapa Nakyai, Sukunya Ross, Malyn Ungsurungsei, Jarupa Viyoch and Gareth Ross
Journal of Applied Polymer Science, 139(2022)51612
- A Python-based program for Covid-19 data monitoring and analyses*
Supagorn Rugmai
Thai Journal of Physics 38(2021)13
- Time-Resolved SAXS/WAXD under Tensile Deformation: Role of Segmental Ethylene-Propylene Copolymers in Impact-Resistant Polypropylene Copolymers*
Wonchalerm Rungswang, Chatchai Jarumaneeroj, Prapasinee Jirasukho, Sawitree Juabrum, Phakkhananan Pakawanit, Siriwat Soontaranon, and Supagorn Rugmai
ACS Applied Polymer Materials, 3(2021)6394
- The effect of poly(acrylic acid) on temperature-dependent behaviors and structural evolution of poloxamer 407
Namon Hirun, Vimom Tantishaiyakul, Tanatchaporn Sangfai, Wannisa Boonlai, Siriwat Soontaranon and Supagorn Rugmai
Polymer International 70(2021)1282
- Structural characterization using SAXS and rheological behaviors of pluronic F127 and methylcellulose blends*
O. Boonrat, V. Tantishaiyakul, Namon Hirun, S. Rugmai and S. Soontaranon
Polymer Bulletin 78(2021)1175
- Better balance of silica-reinforced natural rubber tire tread compound properties by the use of montmorillonite with optimum surface modifier content*
M. Irfan Fathurrohman, S. Rugmai, N. Hayeemasae and K. Sahakaro
Rubber Chemistry and Technology 93(2020)548
- Influence of molecular weight and thermal history on partial melting of polyethylene: Existence of non-lamella crystallite*
W. Rungswang, C. Jarumaneeroj, T. Parawan, P. Jirasukho, S. Juabrum, S. Soontaranon and S. Rugmai
Polymer 211(2020)123096

8. *Phase behavior, in vitro drug release, and antibacterial activity of thermoresponsive poloxamer–polyvinyl alcohol hydrogel-loaded mupirocin nanoparticles*
S. Kamlungmak, S. Rugmai, K. Tinpun, T. Nakpheng and Teerapol Srichana
Journal of Applied Polymer Science 137(2020)49325
9. *Natural rubber as a renewable carbon source for mesoporous carbon/silica nanocomposites*
S. Yousatit, H. Pitayachinchot, A. Wijitrat, S. Chaowamalee, S. Nuntang, S. Soontaranon, S. Rugmai, T. Yokoi and C. Ngamcharussrivichai
Scientific Reports 10(2020)12977
10. *Layered perovskite with compact morphology and reduced grain size via vacuum assisted crystallization for luminescence applications*
K. Zin Swe, A. Naikaew, P. Kaewurai, P. Pansa-NGat, S. Sahasithiwat, L. Kangkaew, S. Rugmai, S. Soontaranon and P. Kanjanaboos
Optical Materials Express 10(2020)1182
11. *Dispersion and Properties of Natural Rubber-Montmorillonite Nanocomposites Fabricated by Novel In Situ Organomodified and Latex Compounding Method*
Mohamad Irfan Fathurrohman, Supagorn Rugmai, Nabil Hayeemasae, Kannika Sahakaro
Polymer Engineering and Science 59(2019)1830
12. *Structure–Property–Process Relationship for Blown Films of Bimodal HDPE and Its LLDPE Blend*
Wonchalerm Rungswang, Panya Wongpanish, Chatchai Jarumaneeroj, Prapasinee Jirasukho, Sawitree Juabrum, Siritwat Soontaranon Supagorn Rugmai
Macromolecular Materials and Engineering 304(2019)1900325
13. *Structural transformations at different organizational levels of ethanol-treated starch during heating*
Achmat Sarifudin, Siritwat Soontaranon, Supagorn Rugmai, Sununta Tongta
International Journal of Biological Macromolecules 132(2019)1131
14. *Influences of tacticity and molecular weight on crystallization kinetic and crystal morphology under isothermal crystallization: Evidence of tapering in lamellar width*
Wonchalerm Rungswang, Chatchai Jarumaneeroj, Supanan Patthamasang, Phairat Phiriyawirut, Prapasinee Jirasukho, Siritwat Soontaranon, Supagorn Rugmai, Benjamin S.Hsiao
Polymer 172(2019)41
15. *Promoting permeability-selectivity anti-trade-off behavior in polyvinyl alcohol (PVA) nanocomposite membranes*
Santi Khoonsap, Supagorn Rugmai, Wei-Song Hung, Kueir-Rarn Lee, Sujitra Klinsrisuk, Sittipong Amnuaypanich
Journal of Membrane Science 544(2017)287
16. *Crystallization behavior studied by synchrotron small-angle X-ray scattering of poly (lactic acid)/cellulose nanofibers composites*
T.C. Nguyen, C. Ruksakulpiwat, S. Rugmai, S. Soontaranon and Y. Raksakulpiwat
Composites Science and Technology 143(2017)106.
17. *Phase-separation of heterophasic polymer in solution: A model case of impact-resistant polypropylene copolymer*

- W. Rungswang, C. Jarumaneeroj, N. Petcharat, S. Soontaranon and S. Rugmai
Journal of Applied Polymer Science 134(2017)45069.
18. Optical Extinction Coefficients of Gold Nanoparticle Aggregates by Small Angle X-Ray Scattering (SAXS)
J.C. Chong, N. Bidin, S-L Lee, M.M. Sanagi, S. Rugmai and S. Soontaranon
Journal of Physical Science 28(2017)61.
19. *Gallic acid conjugated with gold nanoparticles: antibacterial activity and mechanism of action on foodborne pathogens*
Narintorn Rattanata, Sompong Klaynongsruang, Chanvit Leelayuwat, Temduang Limpai boon, Aroonlug Lulitanond, Patcharee Boonsiri, Sirinart Chio-Srichan, Siriwat Soontaranon, Supagorn Rugmai, and Jureerut Daduang
International Journal of Nanomedicine 11(2016)3347.
20. *Investigation of Surfactant Effect on Size Distribution of FePt-based Nanoparticles by Synchrotron SAXS and TEM*
K. Chokprasombat, K. Koyvanich, C. Sirisathikul, P. Harding and S. Rugmai
Transaction of Indian Institute of Metals 69(2016)733.
21. *Spherulitic self-assembly of debranched starch from aqueous solution and its effect on enzyme digestibility*
Worawikunya Kiatpong lar p, Supagorn Rugmai, Agnes Roland-Sabate, Alain Buleon and Sunanta Tongta
Food Hydrocolloids 55(2016)235.
22. *Relationship between Surface Roughness, Internal Crystal Perfection and Crystal Growth Rate*
Shaun Galbraith, Adrian Flood, Supagorn Rugmai and Prae Chirawatkul
Chemical Engineering and Technology 39(2016)199.
23. *Nano-structure, phase transition and morphology of gallic acid and xyloglucan hydrogel*
N. Hirun, V. Tantishaiyakul, T. Sangfai, S. Rugmai and Siriwat Soontaranon
Polymer Bulletin 73(2016)2211.
24. *Small Angle X-ray Scattering Study on PVA/Fe₃O₄ Magnetic Hydrogel*
Sunaryono, Ahmad Taufiq, Edy Giri Rahman Putra, Atsushi Okazawa, Isao Watanabe, Norimichi Kochima, Supagorn Rugmai, Siriwat Soontaranon, Mohammad Zainuri, Triwikantoro, Suminar Pratapa, Darminto
Nano 11(2016)1650027.
25. *Comparative SAXS, DSC and FT-IR Spectra of Polyurethane Coatings Filled with Hexagonal and Sword-like Zinc Oxide*
C. Sirisathikul, C. Pholnak, T. Chareonsuk, P. Panchawirat and S. Rugmai
Arabian Journal of Science and Engineering 41(2016)2339.
26. *Crystal Growth Rate Dispersion versus Size-Dependent Crystal Growth: Appropriate Modeling for Crystallization Processes*
Sukanya Srisanga, Adrian E. Flood, Shaun C. Galbraith, Supagorn Rugmai, Siriwat Soontaranon and Joachim Ulrich
Crystal Growth and Design 15(2015)2330.
27. *Complex Thin Film Morphologies of Poly (n-hexyl isocyanate)(5k, 10k)-Poly (ε-caprolactone) 1-3 (10k, 17k) Miktoarm Star Polymers*
Rarm Phinjaroenphan, Young Yong Kim, Brian J. Ree, Takuya Isono, Jinseok Lee, Supagorn Rugmai, Heesoo Kim, Santi Maensiri, Toyoji Kakuchi, Toshifumi Satoh and Moonhor Ree
Macromolecule 48(2015)5816.

28. *Chemometric and Experimental Investigations of Organogelation Based on β -Cyclodextrin*
A. Klaewklod, V. Tantishaiyakul, T. Sangfai, N. Hirun, S. Rugmai
Advanced Material Research 1060(2015)133.
29. *Effects of Sodium Salt and Sorbitol-Derivative Nucleating Agents on Physical Properties Related to Crystal Structure and Orientation of Polypropylene*
Wonchalerm Rungswang, Kraipop Thongsak, Attaphon Prasansuklarb, Korakot Plailahan, Phutsadee Saendee, Supagorn Rugmai, and Watcharee Cheevasrirungruang
Industrial and Engineering Chemistry Research 53(2014)2331.
30. *Micropower energy harvesting using Poly(Vinylidene Fluoride Hexafluoropropylene),*
P. Sukwisute, N. Muensit, S. Soontaranon and S. Rugmai,
Applied Physics Letters 103(2013)063905.
31. *Tensile deformation of in-reactor polymer alloy with preferentially oriented crystallite in parallel and perpendicular to uniaxial stretching direction: A model case for impact resistance polypropylene copolymer,* W. Rungsawang, K. Plailahan, P. Saendee, S. Rugmai and W. Cheevasrirungruang,
Polymer 54(2013)3699.
32. *Effect of cobalt fillers on polyurethane segmentations investigated by synchrotron Small Angle X-ray Scattering,*
K. Koyvanich, C. Sirisathitkul and S. Rugmai,
Advances in Materials Science and Engineering, Article ID 493867, 2013.
33. *Small Angle X-ray Scattering spectra of iron-based magnetic fluid,*
S. Rugmai, C. Sirisathitkul, K. Chokprasombat, P. Rangsanga, P. Harding, T. Sriksirin and P. Jantaratana,
Materials and Technology 46(2012)4.
34. *SAXS and ATR-FTIR studies on EBT-TSX mixtures in their sol-gel phases,*
N. Hirun, S. Rugmai, T. Sangfai and V. Tantishaiyakul,
International Journal of Biological Macromolecules 51(2012)423.
35. *Small Angle X-ray Scattering at Siam Photon Laboratory,*
S. Soontaranon and S. Rugmai,
Chinese Journal of Physics 50(2012)204.
36. *Phase development and dielectric properties of $0.98\text{BaTiO}_3\text{-}0.02\text{Ba}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ceramic,*
R. Rungtao, S. Rugmai and W. Vittayakorn, **Material Science Forum** 700(2012)58.
37. *Synchrotron beamline optics for x-ray powder diffraction under high pressure condition at Siam Photon Laboratory,*
V. Saengsuwan, W. Klysubun, T. Bovornratanaraks and S. Rugmai,
Z. Kristallogr. Suppl. 30(2009)189.
38. *Adaptive Wiener filter based numerical filter with an application to beam position monitoring,*
K. Nachaiyaphum, S. Sujitjorn and S. Rugmai,
WSEAS Transactions on Electronics 5(2008)40.
39. *Winding design and construction for a sextupole magnet of 1.2 GeV storage ring of the synchrotron light source - Thailand,*
S. Prawanta, S. Sujitjorn and S. Rugmai,
Research and Development Journal of the Engineering Institute of Thailand 19(2008)37.

40. *Characterization of soft x-ray undulator for the Siam Photon Source*,
T. Dasri, S. Siriwattanapitton, W. Chachai and S. Rugmai,
Nuc. Inst. & Meth. in Phys. Res. A582(2007)40.
41. *A 6.4 T superconducting wavelength shifter for generation of hard x-rays at the Siam Photon Source*,
P. Klysubun, S. Rugmai, C. Kwankasem, W. Klysubun and P. Prawatsri,
Nuc. Inst. & Meth. in Phys. Res. A582(2007)47.
42. *Energy Upgrade of the Siam Photon Source*,
S. Rugmai, G. G. Hoyes, S. Prawanta, A. Kwankasem, S. Siriwattanapitton,
N. Suradet, P. Pimol, N. Junthong, S. Boonsuya, P. Janpuang, P. Prawatsri, S.
Rujirawat and P. Klysubun,
AIP Proceedings 879(2007)58.
43. *Beam Based Alignment and COD Correction for the Siam Photon Source*,
S. Rugmai, P. Klysubun and C. Keawprasert,
Proceedings of Asian Particle Accelerator Conference 2007.
44. *Effects of high field permanent magnet insertion device on the Siam Photon Source storage ring*,
Supagorn Rugmai,
Science Asia 31(2005)159.
45. *Three-body effects in the ($d, ^2\text{He}$) charge-exchange reaction*,
S. Rugmai, J. S. Al-Khalili, R. C. Johnson and J. A. Tostevin,
Phys. Rev. C60(1999)027002-1.
46. *Coulomb breakup of light composite nuclei*,
J. A. Tostevin, S. Rugmai, R. C. Johnson, H. Okamura, S. Ishida, N.
Sakamoto, H. Otsu, T. Uesaka, T. Wasaka, H. Sakai, T. Niizeki, H.
Toyokawa, Y. Tajima, H. Ohnuma, M. Yosoi, K. Hatanaka and T. Ichihara,
Phys. Lett. B424(1998)219.
47. *Coulomb dissociation of light nuclei*,
J. A. Tostevin, S. Rugmai and R. C. Johnson,
Phys. Rev. C57(1998)3225.

Programs

1. SAXSoPy: Python-based program for pattern processing, data analyses and nano structural modeling with Small/Wide Angle X-ray Scattering
2. SAXSIT: Matlab-based program for pattern processing, data analyses and nano structural modeling with Small/Wide Angle X-ray Scattering
3. PyCOVID: Python-based program for retrieving and analyzing COVID-19 global infection data
4. BrewSimoPy: Python-based interactive brewing simulator

Books and manuals

1. S. Rugmai, SAXS/WAXS Station manual, ISBN 978-616-120274-3.
2. SAXS/WAXS Data Processing and Analyses with SAXSIT
3. SAXSoPy (SAXS on Python), A program for pattern processing, data analyses and nano structural modeling with Small Angle X-ray Scattering