

Field of Interest

- Hydrogel synthesis and characterization for biomedical applications
- Macromer technology
- Surfactant / polymer interactions
- Macromolecular entrapment and release of hydrophilic moieties

Work Experience

- 2012-present Lecturer / Consultant, Naresuan University, Phitsanulok, THAILAND
- 2009-2011 Post-Doc, Biomaterials Research Unit, CEAC, Aston University, Birmingham, UNITED KINGDOM

Scopus Information:

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PUBLICATIONS

Khumfu, P.; Maneechan, W.; Panmanee, T.; Khiaonoi, N.; Ross, S.; Ross, G.; Viennet, C.; Viyoch, J. Characterization and Migration Activity of Thermoresponsive Silk Fibroin–Aloe Vera Gel in Normal and Diabetic Fibroblasts. *Gels* **2026**, *12*, 188.

Tibkawin, N.; Buasumrit, N.; Boonnoun, P.; Ross, S.; Ross, G.; Tighe, B.; Viyoch, J.; Charoensit, P. Antioxidant Hybrid Pigments Developed by Optimization of Ascorbic Acid Loading into Halloysite Nanotubes via Response Surface Methodology and Co-Loading with Antioxidant-Rich Natural Colorant: A Functional Food Ingredient. *Appl. Food Res.* **2025**, *5*, 101189, doi:10.1016/j.afres.2025.101189.

Namhongsa, M.; Mekpothi, T.; Yarungsee, K.; Chaiwon, T.; Daranarong, D.; Dung-u-kos, K.; Chaitanarit, A.; **Ross, G.M.**; Ross, S.; Punyodom, W. Poly(1-Lactide) Reactive Blends with 1,2,3,4-Butanetetracarboxylic Acid and Poly(Ethylene Glycol) for Enhanced Mechanical Properties and Printability in Biomedical Additive Manufacturing. *ACS Appl. Polym. Mater.* **2025**, *7*, 15717–15732, doi:10.1021/acsapm.5c03529.

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Suttaphakdee, P.; Tuancharoensri, N.; Promkrainit, S.; Boupan, M.; Phimnuan, P.; Sittichokechaiwut, A.; Jongjitwimol, J.; Mahasaronon, S.; Charoensit, P.; **Ross, G.M.**; et al. Exploring the Potential of Functionalized Silk Sericin as a Multifunctional Crosslinker in PHEMA Hydrogel-Based Porous Scaffolds and Compact Sheets for Medical Applications. *Eur. Polym. J.* **2025**, *235*, 114090, doi:https://doi.org/10.1016/j.eurpolymj.2025.114090.

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Kaewpea, S., Touncharoensri, N., Pinthong, T., Suttaphakdee, P., Boupan, M., Boonmee, T., **Ross, G.**, Jantanasakulwong, K., Rachtanapun, P., Mahasaronon, S., Mikeš, P. and Ross, S., Impact of Structural Differences Between PCL and PBS on the Performance and Characteristics of PLA/PCL/CAB and PLA/PBS/CAB Melted-Ternary Blends With Hemp Hurd as a Sustainable Green Filler. *Polym Eng Sci.* **2025** <https://doi.org/10.1002/pen.27262>

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Incorporation with Surface-Porous Electrospun Fibers of Poly(Lactide-Co-Glycolide) for Potential Use as Scaffolds . *Adv. Compos. Hybrid Mater.* **2024**, *7*, 206, doi:10.1007/s42114-024-01040-z.

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Daengmankhong, J.; Ross, S.; Pinthong, T.; Mahasaranon, S.; Viyoch, J.; Tighe, B.J.; Derry, M.J.; Topham, P.D.; **Ross, G.** Water-Soluble Macromers Based on 2-Acrylamido-2-Methyl-1-Propanesulfonic Acid Sodium Salt (Na-AMPS) for Rapid in Situ Hydrogel Film Formation . *Polym. Chem.* **2024**, *15*, 1620–1634, doi:10.1039/d3py01416a.

Weawsiangsang, S.; Rattanachak, N.; Ross, S.; **Ross, G.M.**; Baldock, R.A.; Jongjitvimol, T.; Jongjitwimol, J. Hydroquinone Enhances the Efficacy of Contact Lens Solutions for Inhibiting *Pseudomonas aeruginosa* Adhesion and Biofilm Formation. *Antibiotics* **2024**, *13*, 56. <https://doi.org/10.3390/antibiotics13010056>

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Yooyod, M.; Ross, S.; Phewchan, P.; Daengmankhong, J.; Pinthong, T.; Tuancharoensri, N.; Mahasaranon, S.; Viyoch, J.; **Ross, G.M.** Homo- and Copolymer Hydrogels Based on N-Vinylformamide: An Investigation of the Impact of Water Structure on Controlled Release. *Gels* **2023**, *9*, 333. <https://doi.org/10.3390/gels9040333>

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Ross G.M., Tighe B.J. (2006) Macromolecular entrapment and comfort enhancement: Understanding the mechanism. *Abstracts CLAE 29* p.201 (BCLA 2006 poster abstract)

Ross G.M., Tighe B.J. (2006) Friction characteristics of contact lenses. (poster/oral) *Acta Ophthalmologica Scandinavica*, 2006, 84, Supplement 239, P40 & 167 EVER: European Association for Vision And Eye Research conference, Vilamoura, Portugal, October 4-7th 2006

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Ross G.M., Tighe B.J. (2005) Silicone Hydrogels: Trends in Products and Properties. (poster) BCLA Annual Clinical Conference, Brighton, 2005

Ross G.M., Tighe B.J. (2005) Silicone Hydrogels: Trends in Products and Properties (poster/oral) *Ophthalmic Research Journal for Research in Experimental and Clinical Ophthalmology*, 2005, Volume 37, Supplement 1, 3359 / 240 p162 EVER: European Association for Vision And Eye Research conference, Vilamoura, Portugal, October 5-8th 2005

On-going Projects

FF69 – Thailand Science Research and Innovation (TSRI) (Fundamental Fund),

Global and Frontier Research University (Grant Number R2566C052), Naresuan University.

Global and Frontier Research University (Grant Number R2568C001), Naresuan University.

Completed Projects

1. Thailand Science Research and Innovation (TSRI) (Fundamental Fund R2569B041)
2. Global and Frontier Research University (Grant Number R2568C001), Naresuan University
3. Biocompatibility evaluation of hydrogels developed from a macromer technology platform. (2023-2024) Program Management Unit for Competitiveness (PMUC, contract number C01F660170),
4. Thailand Science Research and Innovation (TSRI) (Fundamental Fund R2567B014, University Order 05791/2566),
5. Marie Skłodowska-Curie Actions (MSCA) Research and Innovation Staff Exchange (RISE) H2020-MSCA-RISE-2019 grant entitled ‘Molecular Design of Polymers for Biomedical Applications’ — ‘MEDIPOL’ grant agreement (NUMBER 871650). (Jan 2020-Dec 2024)
6. RRI PhD scholarship (3 years award) - Starting 1st August 2017 with Amity Laboratory co., ltd, entitled “The development of a technology platform for producing novel cosmetic hydrogels containing locally sourced natural active agents”. (2017-2020)
7. Photo-polymerisation of cationic poly(vinylamine) copolymer hydrogels for anionic organic dye absorption. Annual Government grant (2017-2018)
8. Design, synthesis and characterisation of a novel amphiphilic polymer as a technology platform for multi-layer seed coatings, awarded by national research council of Thailand (**NRCT**) (2016-2017)
9. Natural product healing aids for a novel hydrogel wound dressing system, awarded - awarded by national research council of Thailand (**NRCT**) (2016-2017)
10. Development of Novel Redox Polymerized Biphasic Hydrogel Pressure Sensitive Adhesives, awarded by Naresuan University (2013-2014).
11. The development of sulphonate based porous hydrogels for wound dressing applications, awarded by NRPM (2013-2014).
12. Poly(lactic acid) Based ophthalmic biomaterial Product Showcase supported by PTTGC (2014-15)
13. Fabrication of novel ternary blend of biodegradable microfibers/nanofibers by electrospinning, awarded by Ministry of Science and Technology of Thailand. (2013-2014). (Co-contributor)
14. The effect of reinforced materials on mechanical properties, water sorption and dynamic visco-elastic properties of PMMA dental composite, awarded by Naresuan University (2013-2014). (Co-contributor)

15. Thai silk sericin random coil and β -sheet conformation studies and investigation into semi-interpenetrating polymer network of sericin / biocompatible hydroxyl containing polymers awarded by NRPM (2013-2014). (Co-contributor)