

BOOK

The 8<sup>th</sup> International Conference and **Exhibition on Pharmaceutical Sciences** and Technology 2025 at Ambassador Hotel Bangkok, Thailand

"Advancing Pharmaceutical Frontiers: Collaboration, Innovation, and Patient-Centric Solutions"

June 12 - 13, 2025



#### 8th International Conference and Exhibition on Pharmaceutical Sciences and Technology (PST2025)

#### "Advancing Pharmaceutical Frontiers: Collaboration, Innovation, and Patient-Centric Solutions"

June 12-13, 2025

#### Ambassador Hotel Bangkok, Bangkok, Thailand

#### Organized by

Faculty of Pharmacy, Silpakorn University Thai Industrial Pharmacist Association, Thailand

#### In association with

Faculty of Pharmaceutical Sciences, Burapha University, Thailand

Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand

Faculty of Pharmaceutical Sciences, Huachiew Chalermprakiet University, Thailand

International Society for Pharmaceutical Engineering, Thailand Affiliate

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#### About PST2025

The 8th International Conference and Exhibition on Pharmaceutical Sciences and Technology is an annual academic event organized by educational institutions and professional associations within Thailand. Scheduled for June 12th - 13th, 2025, Ambassador Hotel in Bangkok, Thailand, the PST 2025 Conference serves as a hub for researchers, scholars, students, and practitioners across diverse disciplines to exchange ideas, deliberate on recent trends, and showcase their research within the pharmaceutical sciences and related fields.

#### Theme:

Under the overarching theme, "Advancing Pharmaceutical Frontiers: Collaboration, Innovation, and Patient-Centric Solutions" this year's conference will delve into the latest breakthroughs and challenges in pharmaceutical science and technology. The exploration will extend its influence into numerous fields, including pharmaceutics, industrial pharmacy, pharmaceutical manufacturing, pharmaceutical engineering, pharmacognosy, pharmaceutical analysis, medicinal chemistry, pharmacology, toxicology, cosmetic sciences, biotechnology, nanotechnology, neutraceuticals, and other related fields.

#### Conference Highlights:

The conference program encompasses keynote lectures, oral presentations, poster presentations, and exhibitions, all addressing topics in alignment with the conference theme. It offers an outstanding platform for participants to establish connections, foster collaborations, and gain insights from diverse experiences and viewpoints. The picturesque setting of Bangkok, renowned for its natural splendor and cultural heritage, enhances the conference's distinctive ambiance.

#### Celebrating 40 Years of Excellence: Join Us at Our Anniversary Conference!

We are thrilled to announce a momentous milestone in our Faculty of Pharmacy Silpakorn University journey – our 40th anniversary. To mark this significant occasion, we invite you to join us in celebrating our legacy of innovation, professional growth, and collaboration. We extend a cordial invitation to scholars, researchers, practitioners, and students to submit their research papers and actively engage in this exceptional event. For any inquiries or assistance, please do not hesitate to reach out to us at secretary.pst2025@su.ac.th. Thank you for being an essential part of our 40-year journey, and we look forward to celebrating together.



Message from PST2025 Conference Chairman / Dean of Faculty of Pharmacy, Silpakorn University

Dear Colleagues, Researchers, and Healthcare Professionals,

It is my great pleasure to welcome you to the 8th International Conference and Exhibition on Pharmaceutical Sciences and Technology (PST 2025), held on June 12–13, 2025, at the Ambassador Hotel, Bangkok, Thailand.

Under the theme "Advancing Pharmaceutical Frontiers: Collaboration, Innovation, and Patient-Centric Solutions," PST 2025 aims to provide a vibrant platform for knowledge exchange and partnership across academia, industry, and healthcare. In an era of rapid transformation, this conference offers a timely opportunity to explore emerging trends, share cutting-edge research, and inspire impactful practices in pharmaceutical sciences.

The program features keynote lectures, scientific presentations, workshops, and exhibitions that reflect the dynamic needs of the profession. Through these sessions, we hope to spark innovation, encourage collaboration, and foster meaningful dialogue among participants from around the globe.

I would like to express my deepest appreciation to the Faculty of Pharmacy, Silpakorn University, our co-hosting institutions, professional partners, and sponsors for their generous support and unwavering commitment to the success of this event.

We are delighted to have you here in Bangkok for this unforgettable experience of learning, networking, and advancing health through science.



Warm regards,



Professor Pornsak Sriamornsak, PhD, FCIP, FACP, AFRST Conference Chairman, PST 2025

#### Welcome Message from TIPA

Dear Colleagues and Friends,

On behalf of the Thai Industrial Pharmacist Association (TIPA), it is our pleasure and honor to welcome all of you here in Bangkok for the 8th International Conference and Exhibition on Pharmaceutical Sciences and Technology (PST2025). We are thrilled to host you at the Ambassador Hotel from June 12th to 13th, 2025.

Our theme this year, "Advancing Pharmaceutical Frontiers: Collaboration, Innovation, and Patient-Centric Solutions," truly reflects the dynamic and vital mission of our profession. In an era of evolving scientific discovery and fast growing global health needs, the pharmaceutical landscape demands innovation, collaboration, and unwavering patient-centric mindsets.

PST2025 brings together top-notch experts, researchers, industry professionals, and brilliant aspiring minds from across the globe. Over the next two days, you will have the invaluable opportunity to engage in insightful discussions, discover cutting-edge research findings, and witness the latest technological innovations that are actively shaping the future of pharmaceutical sciences and technology.

Apart from discovering insights, innovations, and opportunities within our field, I sincerely hope you will also take some time to experience the vibrant culture and renowned hospitality that Bangkok so warmly offers.

Thank you for your presence and your invaluable contributions to PST2025. Your active participation makes this conference a truly enriching and memorable experience for all.

Wishing you a most productive, inspiring, and engaging conference! Sincerely,



Warm regards,

Rungnapa Amarinthnukrowh

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President, Thai Industrial Pharmacist Association

#### **Host Institutions**

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#### SCIENTIFIC PROGRAM

#### DAY 1:12 June 2025

Time	Activities	
08.15-09.00	Registration	
09.00-09.15	Welcome Remark & Opening Ceremony	
09.15–10.00	Plenary Lecture I: Prof. Crispin R Dass "Search for novel bioactives against	
	cancer: focus on PEDF"	
10.00-10.20	Coffee break and poster viewing	
10.20-11.05	Plenary Lecture II: Prof. Hirofumi Takeuchi	
	"Challenges in Pharmaceutical technology for patient centric drug therapy"	
11.10–11.45	Industrial talk: Eirich Thailand	
11.45–12.45	Lunch	
12.45 – 13.05	Poster viewing and presentation	
13.05–14.50	Oral presentation	
14.50–15.10	Coffee break, Exhibition, Poster viewing and Presentation	
15.10-16.35	Oral presentation	

#### DAY 2:13 June 2025

Time	Activities		
08.30-09.00	Registration		
09.00-09.45	Plenary Lecture III: Prof. Wong Tin Wui		
	"Cancer nanomedicine development: Bench innovation to clinical translation"		
09.50-10.35	Plenary Lecture IV: Prof. Pithi Chanvorachote		
	"Signaling the Future: Unlocking Innovation Through Skin Stem Cell Pathways"		
10.35-11.00	Coffee break, Exhibition, Poster viewing and presentation		
11.00-11.45	Plenary Lecture V: Prof. Mitsuhiro Nakamura		
	"Comparative Analysis of Adverse Event Profiles Across Drug Dosage Forms Using		
	Real-World Data"		
11.45–12.45	Lunch and Exhibition		
12.45-13.15	Poster viewing and presentation		
13.15-14.00	Plenary Lecture VI: Dr. Hiroyuki Kojima (Astellas Pharma Inc.)		
	"History and Next Era of Pharmaceutical Drug Development from		
	Industrial Perspective"		
14.05–14.50	Plenary Lecture VII: Prof. Bhupendra G. Prajapati		
	"Lipid-Based Novel Formulations for Effective Ocular Drug Delivery"		
14.50–15.05	Coffee break, Exhibition, and Poster viewing		
15.05–15.50	Plenary Lecture VIII: Prof. Soyoung Shin		
	"Advancing the development of GLP-1 receptor agonist: PK/PD		
	considerations"		
15.50–16.15	Awarding & Closing ceremony		

#### List of Invited Speakers

	12 June 2025	Invited Speakers 1 (IS-01)
	09.15–10.00	"Search for novel bioactives against cancer: focus on
		PEDF"
		Prof. Crispin R Dass
		Director Graduate Research - Curtin Medical School,
		Curtin University, Australia
	12 June 2025	Invited Speakers <b>2</b> (IS-02)
43ch	10.20–11.05	"Challenges in Pharmaceutical technology for patient
		centric drug therapy"
		Prof. Hirofumi Takeuchi
		Advanced Pharmaceutical Process Engineering, Gifu
		Pharmaceutical University, Japan
	13 June 2025	Invited Speakers <b>3</b> (IS-03)
	09.00-09.45	"Cancer nanomedicine development: Bench innovation to
		clinical translation"
		Prof. Wong Tin Wui
		Universiti Teknologi Mara, Malaysia
	13 June 2025	Invited Speakers 4 (IS-04)
95	09.50–10.35	"Signaling the Future: Unlocking Innovation Through Skin
	07.50 10.05	Stem Cell Pathways"
		Prof. Pithi Chanvorachote
		Department of Pharmacology and Physiology, Faculty of
		Pharmaceutical Sciences, Chulalongkorn University
		rnannaceutical sciences, chulatongkom university

	13 June 2025	Invited Speakers <b>5</b> (IS-05)
66	11.00–11.45	"Comparative Analysis of Adverse Event Profiles Across
		Drug Dosage Forms Using Real-World Data"
		Prof. Mitsuhiro Nakamura
		Laboratory of Drug Informatics, Gifu Pharmaceutical
14		University, Japan
	13 June 2025	Invited Speakers <b>6</b> (IS-06)
	13.15-14.00	"History and Next Era of Pharmaceutical Drug Development
		from Industrial Perspective"
		Dr. Hiroyuki Kojima
		Senior Vice President, Head of Pharmaceutical Research
		& Technology Labs, Astellas Pharma Inc., Japan.
	13 June 2025	Invited Speakers 7 (IS-07)
	14.05–14.50	"Lipid-Based Novel Formulations for Effective Ocular
(300)		Drug Delivery"
		Prof. Bhupendra G. Prajapati
		College of Pharmaceutical Education and Research,
( ) ( )		Ganpat University India
INTVERS		
	13 June 2025	Invited Speakers <b>8</b> (IS-08)
	15.05–15.50	"Advancing the development of GLP-1 receptor agonist:
		PK/PD considerations"
		Prof. Soyoung Shin
		College of Pharmacy, Chung-Ang University



#### Search for novel bioactives against cancer: focus on PEDF

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#### **ABSTRACT**

Cancer and diabetes are two major killers in modern society, increasing in incidence in developing nations due to a variety of reasons, change of diet and lifestyle being a big factor. Pigment epithelium-derived protein (PEDF) is linked to various biological/physiological processes, and its absence or dysfunction can lead to a variety of ailments such as cancer and diabetes. It is also considered a biomarker for certain metabolic syndromes, which include cancer and diabetes. Starting from our early work in 2005 in linking PEDF to the devastating bone cancer osteosarcoma, we have travelled 20 years to the role PEDF plays in insulin resistance and diabetes, and design and testing of short peptides based off the parent PEDF sequence as we slowly move towards clinical trials. PEDF is also a potent bone regeneration protein, able to stimulate stem cells to form bone when implanted in muscle or adipose tissue in vivo. Some of these data will be discussed. Drawing on past success of hosting Thai students at Curtin University, opportunities for collaborations and student exchange will also be presented briefly.

#### Challenges in Pharmaceutical technology for patient centric drug therapy

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#### **ABSTRACT**

Patient centric is one of the most important key words in recent drug therapy. In developing dosage forms, pharmaceutics researchers try to find a suitable administration rote with a dosage form to reach the most effective and safe drug delivery. In considering patient centricity in drug therapy, easy administration with higher adhesiveness to drug administration is also important factor in designing the dosage forms.

In this presentation the trends and challenges for developing patient centric dosage forms are introduced in the following 4 points.

- 1. Development of several dosage forms considering the types of patients or diseases
- 2. New dosage form designs for pediatric and geriatric patients: ODT and ODF
- 3. Other topics in drug administration
- 4. Colloidal drug delivery for the better drug administration: Eye drops for drug delivery to retina After introducing some commercially developed dosage forms for considering patient use, information about orally disintegrating tablets (ODTs) and films (ODFs) are explained as typical patient centric oral dosage forms (1 and 2). The drugs for COVID-19 are included in this part. In the point 3, I would like briefly talk about i) IoT for drug administration and health (IoMT) ii) development of pediatric drug (dosage forms) iii) tube administration of oral dosage forms.

In changing the administration method, new technology is sometimes required. Novel technology on colloidal particles is one of useful tools to design the dosage form. In the point 4, I would like introduce our results about delivery of drug to posterior part of eye (retina) by using liposomes.

#### Cancer nanomedicine development: Bench innovation to clinical translation

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#### **ABSTRACT**

The personalised perspective of precision medicine in cancer therapy involves patient's health/omics analysis and therapy customized to the individual health requirements. More than one drug may be delivered in variable doses, in specific delivery kinetics, and to different intended target sites of action. An ideal dosage form is preferably can be dispensed flexibly with the required drug delivery characteristics. The dosage form should ideally be characterized by 100 % drug bioavailability. This presentation highlights the recent nano cancer drug delivery innovations for skin, pulmonary and oral applications from the perspectives of material design, processing technology, dosage form development, and active device invention to realize the true meaning of personalized therapy. Excipient selection for precision cancer nanomedicine development against the profiles of cancer cell target and metabolizing enzyme will be discussed from the perspective of cancer omics/healthcare analysis.

Signaling the Future: Unlocking Innovation Through Skin Stem Cell Pathways

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#### **ABSTRACT**

Skin stem cells are essential for the maintenance, repair, and regeneration of the epidermis, serving as a critical bridge between fundamental biological research and translational medical applications. "Signaling the Future: Unlocking Innovation Through Skin Stem Cell Pathways" examines the intricate signaling networks—such as Wnt, Notch, Hedgehog, and BMP—that orchestrate skin stem cell behavior under both physiological and pathological conditions. In contrast, cellular senescence—long regarded as a hallmark of aging—is now recognized for its complex, dual role in stem cell regulation: acting both as an impediment to regeneration and as a modulator of tissue remodeling. This presentation explores the dynamic interplay between senescence-associated signaling and stem cell function, and how it shapes skin homeostasis, aging, and the tissue's response to injury. We further discuss how these insights are informing the development of next-generation therapies, including proregenerative strategies and senolytic interventions. By integrating advances in stem cell signaling with emerging knowledge of senescence, this work highlights the transformative potential of targeting these pathways to unlock new frontiers in regenerative medicine and therapeutic innovation.

## Comparative Analysis of Adverse Event Profiles Across Drug Dosage Forms Using Real-World Data

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#### **ABSTRACT**

In this presentation, we will introduce a series of retrospective studies conducted using spontaneous reporting system (SRS) databases to evaluate drug-associated adverse events. The studies include:

- (1) An analysis of drug-induced gingival hyperplasia based on data from the Japanese Adverse Drug Event Report database (JADER);
- (2) A comparison of adverse event profiles between conventional and liposomal formulations of doxorubicin using the FDA Adverse Event Reporting System (FAERS);
- (3) An investigation into chemotherapy-induced peripheral neuropathy associated with solvent-based paclitaxel and nanoparticle albumin-bound paclitaxel using JADER; and
- (4) A comparison of adverse event profiles of different formulations of amphotericin B using real-world data from FAERS.

These studies demonstrate the utility of SRS databases in pharmacovigilance and provide insights into formulation-specific safety profiles of commonly used medications.

## History and Next Era of Pharmaceutical Drug Development from Industrial Perspective

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#### **ABSTRACT**

The author presents the history and future prospects of pharmaceutical development from an industry perspective. In the 1980s, there was a strong focus on basic research and evaluations such as absorption from GI tracts, physical properties, drug dissolution. Since the 1990s, not only conventional oral solid dosage forms such as tablet and capsules but also novel pharmaceutical technologies aiming for product value maximization have been extensively investigated. For instance, we firstly developed a medicine with oral disintegrating tablet (ODT) technology in Japan in 1997. That was a point of innovation because the ODT has become one of the major dosage forms nowadays in Japan. In addition to pediatric formulation, the industry has emphasized on drug product development of high-potent compounds when focus has been placed for anticancer drug development since the 2010s. Recently, sterile preparations including antibodies and ADCs (antibody-drug conjugates) as well as drug development of various new modalities including cells and genes are the noteworthy areas of the technology. The author introduces our, RICEP (Reconstitute and Inject CEll Product) technology, a new format of cell product. We developed an approach to manufacture and store the cell drug products, followed by transport under cryogenic conditions. This will allow us the batch production and the storage of cell products for up to several years. It is expected that cost reduction as well as complicated supply chain scheme to arrange the manufacturing/shipment to the date of administration for each patient will be alleviated by thawing and reconstituting the RICEP formulation at the clinical site just before the treatment.

#### Lipid-Based Novel Formulations for Effective Ocular Drug Delivery

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#### **ABSTRACT**

Ocular drug delivery remains a significant challenge due to the eye's unique anatomical and physiological barriers, including tear turnover, blinking, and limited permeability of the corneal epithelium. Lipid-based novel formulations have emerged as promising strategies to overcome these obstacles and enhance ocular bioavailability. These systems—such as liposomes, nanoemulsions, solid lipid nanoparticles (SLNs), and nanostructured lipid carriers (NLCs)—offer several advantages, including improved drug solubility, sustained release, mucoadhesion, and protection of labile drugs from degradation. Their biocompatibility and ability to encapsulate both hydrophilic and lipophilic drugs make them ideal candidates for ocular applications. Liposomes mimic biological membranes and enhance corneal penetration, while SLNs and NLCs provide controlled drug release and prolonged retention in the ocular tissues. Moreover, these formulations can be tailored for targeted delivery, reducing systemic absorption and minimizing side effects. Recent advancements in surface modification and mucoadhesive agents further improve the residence time and therapeutic efficacy of lipid-based ocular formulations. Despite some formulation challenges, such as particle stability and sterilization, ongoing research and technological progress continue to drive their development. Overall, lipid-based systems represent a versatile and effective approach to ocular drug delivery, holding significant promise for treating various anterior and posterior segment eye diseases with improved therapeutic outcomes.

(1S-08)

Advancing the development of GLP-1 receptor agonist: PK/PD considerations

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#### **ABSTRACT**

The development of glucagon-like peptide 1 (GLP-1) receptor agonists has significantly advanced the therapeutic landscape for type 2 diabetes and obesity. However, their clinical translation remains challenging due to complex pharmacokinetic (PK) behaviors. We employed highly sensitive and robust LC-MS/MS methods to accurately quantify their concentrations in biological matrices, enabling comprehensive PK characterization. Using these LC-MS/MS methods, the pharmacokinetics of GLP-1 receptor agonists, including liraglutide, semaglutide, and tirzepatide, were comparatively evaluated. To better understand and predict the in vivo pharmacokinetics of these agents, advanced PK modeling strategies, including target-mediated drug disposition (TMDD) and in vitro-in vivo correlation (IVIVC) models, were developed. The TMDD model successfully characterized the dose-dependent nonlinear PK behavior of these peptides. We also employed an IVIVC modeling framework integrated with design of experiment (DoE) to develop sustained-release formulations of GLP-1 receptor agonists. Collectively, our approach highlights the utility of mechanistic PK modeling to overcome challenges associated with peptide therapeutics and accelerate the development of next-generation GLP-1 receptor agonists.

Keywords: GLP-1, LC-MS/MS, Pharmacokinetics, Pharmacodynamics, Target-mediated drug disposition

#### Venue





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