



IMRP20

BANGKOK

thailand



IMRP20 PRE-CONFERENCE TRAINING COURSE  
RADIATION PROCESSING FOR ADVANCED  
AND RENEWABLE MATERIALS – FROM  
BASICS TO INDUSTRIALIZATION

Kasetsart University, Bangkok, Thailand  
November 2-4, 2022



*Presented together with the 20<sup>th</sup> International Meeting on Radiation Processing  
held at AVANI+ Riverside Bangkok Hotel, November 7-11, 2022.*

Are you a graduate student (MSc, PhD) or young professional with a background in physics, chemistry, biology or engineering with a strong interest and motivation to acquire additional skills in the field of radiation processing?

**Then this training is for you!**

The 3-day long training course will offer a condensed overview of radiation processing applied to material enhancement. It will focus on the physical phenomena, the chemical mechanisms and the technological aspects of radiation processing. You will thus have the keys for apprehending the sessions on advanced radiation chemistry and irradiation technologies that will be presented the following week during IMRP20. The course will enhance your capability to carry out your academic or professional activities with a strengthened background.

**Program and Organizing Committee**

- Ms. Wanvimol Pasanphan, KU, Bangkok, Thailand
- Ms. Pimporn Uttayarat, TINT, Bangkok, Thailand
- Mr. Sakchai Laksee, TINT, Bangkok, Thailand
- Mr. Xavier Coqueret, URCA, Reims, France
- Mr. Bum Soo Han, IAEA, Vienna, Austria
- Mr. Yves Hénon, iia, France

**Accommodation and Travel**

Information will be provided on the selection and booking of affordable accommodation for students in Bangkok. The skytrain, underground metro and taxis provide low cost and effective transport. Further information is available on the IMRP20 website: [imrp-iaa.com](http://imrp-iaa.com).

**Registration**

Students may register via the IMRP20 website: [imrp-iaa.com](http://imrp-iaa.com). The **Student all-inclusive package** includes attendance of the training course and the IMRP20 conference. Attendees from industry may also registry via the same website. tutorials, demos and visits organized over 3 days. The lectures (typically 14) will be given by international and local experts from academia, research and industry.

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### PROGRAMME OVERVIEW (provisional)

#### Basics of radiation processing

- Radiation-matter interaction, penetration of radiation
- Dose control and dosimetry
- Radiation processing technologies (low and high energies)
- Overview of commercial industrial applications

#### Fundamental radiation chemistry

- Ionization of matter, primary species, timeframe, mechanisms
- Quantification of radiation effects: G-values
- Kinetic studies based on pulse radiolysis
- Monitoring of radiation-induced reactions

#### Radiation cross-linking of thermoplastics and elastomers

- Principles and applications
- Determination of  $G(X)$  and  $G(S)$ , theoretical models, analytics
- Ageing of materials after irradiation

#### Radiation-induced polymerization

- Basics of polymerization chemistry
- Curing by cross-linking polymerization (inks, coatings, composites)
- Radiation-induced graft polymerization

#### Advanced applications

- Radiation-induced formation of hydrogels
- Radiolytic synthesis of metal nanoparticles, other nanostructured materials
- Natural polymers (polysaccharides, proteins, lignocellulosic products)
- Environmental protection and remediation

#### Biological effects of radiation processing

- Basics on ionizing radiation and the life sciences
- Sterilization of healthcare products
- Food and agricultural applications

Reserve your spot

Go to [imrp-iia.com](http://imrp-iia.com) and take advantage of the Student all-inclusive package



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