RPK-C 2023

POLYMER PROPERTIES

PROGRAMME

Three short introductory lectures on key physical properties of polymers and how they influence performance via processing and mechanics

14 April 2023

01a Introduction Physical Properties & Polymer Processing
Dr.ir. Lambèrt C.A. van Breemen (TU/e) & Dr.ir. Tom A.P. Engels (DSM-TU/e)

01b Introduction Mechanical Properties
Dr.ir. Lambèrt C.A. van Breemen (TU/e) & Dr.ir. Tom A.P. Engels (DSM-TU/e)

Lectures on the mechanical performance of polymers and polymer-based composites and how it can be influenced by production and processing

21 April 2023

02 *Polymer Composites*
Dr.ir. Wouter J.B. Grouve (UT)

03 *Polymer Mechanics*
Prof.dr.ir. Leon E. Govaert (TU/e - UT)

Lecture on stabilizing polymers to extend their useful life, and a lecture on the physics of polymer crystallization and how it can influence and enhance properties

12 May 2023

04 *Degradation and stabilization of polymer systems*
Dr. Pieter Gijsman (Gijsman-durability-advisory)

05 *Crystallization of Polymers*
Dr. Jules A.W. Harings (AMIBM, NL & Germany)

A set of lectures on the physics and properties of elastomer-based systems; both from an academic and industrial perspective

26 May 2023

06 *Properties of Elastomers*
Prof.dr. Costantino Creton (ESPCI, France)

07 *Elastomer Properties from an Industrial Perspective*
Dr. Salvatore Coppola (Versalis - ENI, Italy)

Two lectures discussing polymer adhesion and self-healing, focusing on how polymer chemistry and physics can be used to control these properties

02 June 2023

08 *Polymer Materials for Adhesion*
Prof.dr. Marleen M.G. Kamperman (RuG)

09 *Polymer Materials for Self-healing*
Dr. Santiago J. Garcia (TUD)

A set of lectures on advanced high-modulus/high-strength fibers each approaching the target of exceptional mechanical properties via different conceptual routes

09 June 2023

10 *High Performance Fibers based on Flexible Chains*
Dr. Harm van der Werff (Avient)

11 *High Performance Fibers based on Rigid Rod Molecules*
Speaker to be announced (Teijin Aramid)

Two lectures on functional and responsive polymer systems. Highlighting the exciting and developing field of polymers used for actuation and sensing

16 June 2023

12 *Polymer Materials in Microsystem Applications*
Prof.dr.ir. Jaap M.J. den Toonder (TU/e)

13 *Polymer Materials for Soft Robotics*
Dr. Danqing Liu (TU/e)

RPK-C 2023

POLYMER PROPERTIES

PROGRAMME

A set of lectures dealing with polymers that are used to regulate the transmission of small molecules (permeability) and polymers used to regulate the transmission of ElectroMagnetic fields

23 June 2023

14 ***Permeability of Polymer Materials***
Dr.ir. Alexander Stroeks (DSM)

15 ***Polymer nanocomposites for electromagnetic shielding***
Prof.dr.ir. Ruth M. Cardinaels (KUL, Belgium)

Lecture dealing with polymer membranes, focusing on their processing, architecture and current and future applications. And a lecture focusing on the fast-developing field of polymer recycling and sustainability: what are the most promising routes based on the specific properties of a polymer system

30 June 2023

16 ***Polymer Materials for Membrane Surfaces and its Applications***
Prof.dr. Wiebe M. de Vos (UT)

17 ***Towards a circular polymer industry – the role of recycled and renewable carbon***
Prof.dr. Jean-Paul Lange (Shell – UT)

Summer 2023

Exam RPK-C (open book) 14 July 2023: 1 - 4 pm
Re-sit Exam RPK-C (open book) 01 September 2023: 1-4 pm

Details of the programme are subject to change.
All lectures will be given in English.

All lectures will be held in Beatrix-Jaarbeurs building in Utrecht, starting at 10:15 am, ending at 5:00 pm