

PROGRAMME
RPK-C 2020
POLYMER PROPERTIES

- January 10** *Introductory lectures on the mechanical and physical properties of polymers and the various methods to determine and quantify these properties:*
- 01 Introduction Mechanical Properties**
Dr.ir. L.C.A. van Breemen (TU/e)
 - 02 Introduction Physical Properties**
Prof.dr. S.J. Picken (TUD)
- January 17** *Lecture linking polymer architecture to polymer properties in general as well as lecture on the use of polymers for solar energy harvesting:*
- 03 High-performance Polymer Materials**
Prof.dr. T.J. Dingemans (Chapel Hill, USA)
 - 04 Polymers & Solar Energy**
Prof.dr. R.A.J. Janssen (TU/e)
- January 24** *Lecture on the long term properties of engineering polymers and a companion lecture on tuning the properties of semi-crystalline polymers in general:*
- 05 Long-term Mechanical Properties**
Prof.dr.ir. L.E. Govaert (TU/e - UT)
 - 06 Properties of Semi-crystalline Materials**
Prof.dr.ir. T.A. Tervoort (ETH Zürich - Switzerland)
- January 31** *Lectures on advanced high-modulus/high-strength fibres each approaching the target of exceptional mechanical properties via different conceptual routes:*
- 07 High Performance fibers**
Dr.ir. T.A.P. Engels (TU/e - DSM)
 - 08 Liquid Crystalline Solutions**
Dr. H. Boerstoeel (Teijin Aramid)
- February 7** *Lectures dealing with polymer membranes, focussing on their processing, architecture and current and future applications. It is a big field, so again two lectures on this topic are foreseen.*
- 09 From Polymer to Rubber - an introduction to the world of elastomers**
Dr. M. Viol (UT)
 - 10 Membrane Technology & Applications**
Prof.dr.ir. N.E. Benes (UT)
- February 14** *Lecture addresses the interaction between light and polymers, but now for photo-responsive polymers and OLEDs:*
- 11 Polymers & Light**
Prof.dr. D.J. Broer (TU/e)
 - 12 Self-healing Polymers and other materials**
Prof.dr.ir. S. van der Zwaag (TUD)
- February 21** *Lectures cover two important new fields: The recycling of polymers and molecular electronics:*
- 13 Recycling Polymers**
Dr. R.K. Bose & Prof.dr. F. Picchioni (RuG)
 - 14 Molecular Electronics**
Prof.dr. P. Blom (Max Planck Institute, Mainz - Germany)

February 28

Lecture dealing with polymers and energy storage which is a relatively new field and with polymers for packaging, which is an older field but one of extreme importance given the huge volumes of material produced:

15 Polymers & Energy Storage

Dr. E.M. Kelder (TUD)

16 Multi-layer Extrusions

Dr.ir. J.G.P. Goossens (SABIC)

March 6

Lectures devoted to polymers for aircraft composites and bio-inspired polymer systems for wide range of applications. Again combining established and new applications:

17 Aerospace Grade Composites

Prof. C. Dransfeld (TUD)

18 Bio-inspired systems

Prof.dr. J. C.M. van Hest (TU/e)

April 3

Exam RPK-C (closed book) 1 - 4 pm

May 20

Re-sit exam RPK-C (closed book) 1 - 4 pm

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

**All lectures will be held at the NH Hotel in Utrecht,
starting at 10.15 am, ending at 5.00 pm**