University Alliance of the Silk Road (UASR)

Virtual Summer Courses 2020

Frontiers in Materials Research

Organizers

Materials Science and Engineering Sub-alliance of UASR
School of Materials Science and Engineering , Xi'an Jiaotong University

Open Time

July 20 - 31 2020

How to join

Step 1: Input the website below or scan the QR code to register.
【Applicable to PC】
Visit http://ss.mooc.xjtudlc.com/ and click "Course Registration" in the top left column; or straightly visit http://new.ikcest.org/my/register.htm?returnUrl=http://new.ikcest.org/my/training_userlist.htm&type=srst
【Applicable to cell phone】 Scan the QR Code below.

Step 2: Click the "+Register" control on the top right of the interface, enter the course selection and input the corresponding course verify code S19010.
Step 3: Go to the Learning page to begin course study. Visit http://ss.mooc.xjtudlc.com to start online study from July 20, 2020 to July 31, 2020.
(The Username is the email address you filled in when you registered, and the password is ikcest. The account will be available after 00:00 Beijing Time on July 20, 2020)
Step 4: Go back to the Registration Page when finishing all courses and take the online exam before filling in the questionnaire.

Introduction

Materials Science and Engineering is a multidisciplinary research field that covers materials research, technological engineering, chemistry and physics, providing essential supports for electronics, energy, mechanical and chemical engineering, and other industries. This course will provide 10 focused lectures to present frontiers in materials research, including semiconductor materials, two-dimensional materials, polymer materials, advanced energy materials, ferroic smart materials, 3D printing materials, structural and engineering materials and others. This course will emphasize the leading role of materials science in fundamental research, and will also discuss its indispensable role in industrial developments. Every lecture will provide interested participants a comprehensive list of references for further reading and investigations.

Lecturers

Wei Zhang (Coordinator)

Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Georg Mehl

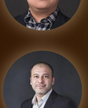
Professor at University of Hull, UK. Adjunct Professor at Xi'an Jiaotong University.

Tao Li

Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Suck Joo Na

Professor at Xi'an Jiaotong University. Fellow of the Korean Academy of Science and Technology.

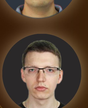


Kai Chen

Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Oktay Aktas

Associate Professor at School of Materials Science and Engineering , Xi'an Jiaotong University .



Jian Zhou

Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Ihor Radchenko

Assistant Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Xiaohui Ning

Associate Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Muhammad Shafa

Assistant Professor at School of Materials Science and Engineering, Xi'an Jiaotong University.

Course Program

NO.#	Content	Lecturers	Open Date
Lecture 1	Novel Materials for future memory and neuro-inspired computing technologies	Wei Zhang	July 20 2020
Lecture 2	Liquid Crystal - Noble Metal Nanocomposites: Design Parameters and Functionality	Georg Mehl	July 21 2020
Lecture 3	The interplay between 2D materials and ferroelectric materials	Tao Li	July 22 2020
Lecture 4	Laser-matter interaction and Laser materials processing	Suck Joo Na	July 23 2020
Lecture 5	The design, characterization, and heat treatment of 3D printed superalloy single crystals	Kai Chen	July 24 2020
Lecture 6	Ferroic smart materials and their applications	Oktay Aktas	July 27 2020
Lecture 7	Computational design of nanoscale materials and their physical applications	Jian Zhou	July 28 2020
Lecture 8	Confining dislocation sources by interfaces	Ihor Radchenko	July 29 2020
Lecture 9	Novel molten salt battery for grid energy storage	Xiaohui Ning	July 30 2020
Lecture 10	Novel Materials for future room temperature gas sensor and DNA sensor inspired nanomaterials	Muhammad Shafa	July 31 2020