

Joint Workshop

## Artificial Intelligence in Materials Science

*online series of lectures*

4TU.High-Tech Materials

&

Materials Innovation Institute (M2i)

16<sup>th</sup> & 23<sup>rd</sup> of June 2021, 3-5 PM (CEST)

\* \* P R O G R A M M E \* \*

Artificial Intelligence (A.I.) has grown into a major tool of scientific and technological importance and impact. Its huge potential to optimise design, production and application of materials attracts more and more interest from materials scientists. Amongst other aspects, participants to this workshop are encouraged to explore the huge potential of A.I. in combination with physics. The workshop provides reviews and examples of present and future applications of Artificial Intelligence in materials science and engineering for a range of materials and with an emphasis on sustainability.

## Artificial Intelligence in Materials Science

\* \* P R O G R A M M E \* \*

	<b>Wednesday 16 June</b>
	Introduction & chair <b>Prof.dr.ir. Jilt Sietsma</b> (scientific director 4TU.HTM) Materials Science and Engineering, 3mE, Delft University of Technology
15.00 - 15.30	<b>Sid Kumar (TU Delft)</b> <i>What machine learning can do for inverse design of (meta-)materials</i>
15.30 - 16.00	<b>Laura Filion (UU)</b> <i>Soft matter meets machine learning: autonomously identifying hidden structure in glassy systems</i>
16.00 - 16.30	<b>Bojana Rosic (Utwente)</b> <i>Stochastic physics-constrained deep learning for prediction of non-linearities under uncertainties</i>
16.30 - 17.00	<b>Questions &amp; Answers</b>
	<b>Wednesday 23 June</b>
	Introduction & chair <b>Dr. Marcel Sluiter</b> (Associate professor, Materials Science and Engineering, 3mE, Delft University of Technology and visiting professor in the Department of Electromechanical, Systems and Metal Engineering, Faculty of Engineering and Architecture, Ghent University)
15.00 - 15.30	<b>Miguel Bessa (TU Delft)</b> <i>Spider web nanomechanical resonators with Bayesian optimization</i>
15.30 - 16.00	<b>Dimitrios Zarouchas (TU Delft)</b> <i>Adaptive prognostics for remaining useful life of aerospace structures utilizing fused health monitoring data and machine learning</i>
16.00 - 16.30	<b>Menno Bokdam (Utwente)</b> <i>On-the-fly machine learning force fields with near first principles precision: Predicting phase transitions in complex solids</i>
16.30 - 17.00	<b>Ondrej Rokos (TU/e)</b> <i>Learning constitutive models in multiscale modeling of materials</i>

All information online:

<https://www.4tu.nl/htm/en/events/workshop-artificial-intelligence-in-materials-science/>