

## PERIODIC REPORT BY THE SUPERVISORS FOR THE EST

### DETAILS OF EST AND ESR

<b>ESR</b>	6
	Reza Norouzikudiani
<b>Beneficiary Institution</b>	SSSA
<b>Title of the research project</b>	Finite element models for dynamical actuation of LC sheets
<b>Main supervisor</b>	Antonio DeSimone
<b>Co-supervisor 1</b>	Alessandro Lucantonio
<b>Co-supervisor 2 (if any)</b>	/
<b>Reporting period</b>	From 18/02/2023 to 31/05/2023
<b>Date of report</b>	21-Jun-23

<b>EST</b>	3
<b>EST members</b>	Maarten Beelen (PREC) Carlos Sánchez Somolinos (CSIC) Danqing Liu (TUE)



## ASSESSMENT

<p><b>Overall evaluation of the ESR progress</b></p>	<p><i>Short paragraph with the assessment of the ESR progress since the last review (there is no need to include details of the activities since they will be described in the ESRs report).</i></p> <p>Reza Norouzikudiani (ESR6) is continuing his developments towards a computational model for the dynamics of photo-responsive LCEs based on the Finite Element Method.</p> <p>He has developed a model for an LCE beam including photothermal and photochemical effects and thermal diffusion and has implemented in the COMSOL Multiphysics software package.</p> <p>The paper he has presented on this topic at a conference in Fall 2022 has now been accepted for publication on the journal Mechanics Research Communications:</p> <p>R. Norouzikudiani et al.: Equilibrium and transient response of photo-actuated Liquid Crystal Elastomer beams. Mechanics Research Communications 131 (2023) 104126  <a href="https://doi.org/10.1016/j.mechrescom.2023.104126">https://doi.org/10.1016/j.mechrescom.2023.104126</a>  <a href="https://www.sciencedirect.com/science/article/pii/S0093641323000848">https://www.sciencedirect.com/science/article/pii/S0093641323000848</a></p> <p>In May 2023 he has started a two-month secondment at TU Eindhoven, where he is working on a three-dimensional model for the photo-thermal response of LCE fibers.</p> <p>In short, the doctoral student has satisfactorily fulfilled the objectives set for the period and continues his work and training in the field of research of his project.</p>
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**POINTS OF IMPROVEMENT**


<p><b>Points of improvement</b></p>	<p><i>Short paragraph indicating any difficulties or problems encountered since the last review if any, and possible points of improvement for the ESR progress.</i></p> <p>We confirm the positive evaluation on Reza’s attitude towards learning. He is proactive and able to work independently. There are no special difficulties or problems encountered at this point and his performance is excellent.</p>
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DATE & SIGNATURE OF MAIN SUPERVISOR: 21/06/2023



DATE & SIGNATURE OF CO-SUPERVISOR: 21/06/2023



DATE & SIGNATURE OF CO-SUPERVISOR: \_\_\_\_\_

