Funded by the European Union

DC2 – Open Position

Position Description	
Reference	DC2
Project title	Machine learning modeling as soft sensors in view of design of sustainable radical emulsion polymerization
Recruiting Institution	UGENT – Ghent University
Secondment	Short secondments in CINEMA academic and industrial partners are expected
Expected Start Date (estimated)	July 1st, 2023 (or earlier if possible)

Job Offer Description	
Keywords	Machine learning, sensors
Objectives	Machine learning modeling algorithm comparison combined with first principles mathematical modeling in the framework as soft sensor for individual and joint setpoint control of macromolecular architecture, molar mass distribution (MMD), and particle size distribution (PSD) in radical emulsion polymerization.
Expected Results	(i) Classification of machine learning algorithms in view of the prediction of macromolecular structure, architecture and MMD. (ii) Machine learning modeling validated against experimental data and optimized with respect to speed for use as soft sensor for macromolecular structure, architecture, MMD, and PSD. (iii) Illustration of potential of developed machine learning model for online set-point control of macromolecular structure, architecture and MMD via soft sensors for these properties, considering in a first stage literature data..
Supervisors	Prof. Dagmar R. D'hooge and Dr. Y.W. Marien

Vacancy requirements	
Qualifications	MSCA-recruiting rules are applied: not having resided in Belgium for more than 12 months in the 3 years immediately before the recruitment date, and not having carried out their main activity (work, studies, etc.) in Belgium during this period. Having a master degree or equivalent diploma, and not having a doctoral degree. Solid background in mathematical tools, ideally populations balances as valid for polymerization kinetics. Experimental skills are an extra added value but not the core of the needed skill set.
Languages	Excellent command of written and spoken English is a must

Skills	Ability for research management, dissemination, communication with colleagues and supervisors, strong teamwork spirit, creativity and problem solving.
Experience	Research experience in the academic or industrial sector will be considered

Job Details	
Salary	Salary and benefits will follow the rules of the MSCA-DN, as foreseen in the Marie Skłodowska-Curie Actions Work Programme. Gross salary per month in Belgium: (3400€ per month*CCC Belgium (100,0%)) 3400,00€ + 600 € mobility allowance
Other benefits	Other benefits: Gross family allowance: 660€ per month - if applicable* *The family allowance will also be made available to researchers whose parental status changes during their project.
Duration	36 months
Type of contract	Full time
Place of work	Ghent (Belgium). Ghent University