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Development of a New Industry Focused Plasma Simulation Tool ADAM WILLIAMS, University College London, SERGIO LÓPEZ-LÓPEZ, Quantemol Ltd., DEREK MONAHAN, WILL BRIGG, JONATHAN TENNYSON, University College London — Plasma processes are routinely used in a number of industrial settings. However, in the majority of these cases the techniques and procedures used to create the required plasma are determined by experimental trial and error. This advancement has been led in a large part by the technical ability of the engineers in charge of the processes. This mode of operation has largely worked thus far, however, with more complex plasma chemistries being developed and the continual drive for efficiency, simulations are rapidly becoming another instrument in the process engineer's toolset. This poses interesting requirements on any simulation software which is aimed toward industry, such as: ease of use/automation, robust chemistry libraries, simulation speed and reliability. It is the goal of this new project at UCL and Quantemol Ltd. to tackle these issues and more, by developing a simulation tool specifically targeted to industrial applications. This new software will allow the simulation of fully 3D geometries, implementing an automatically refined finite element method (FEM) to solve the appropriate fluid equations, coupled with kinetic simulation methods to improve model efficacy.

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