S2.1.1 - *Computational Fluid Dynamics in the Filtration of Non-Newtonian Fluids*

Paul Hulme[1]
[1]John Crane

Computational Fluid Dynamics (CFD) are a well-known method in predicting the performance of equipment in contact with fluids. To simulate a filter, more knowledge needs to be added into the CFD software: The behaviour of the metallic filter medium itself, the influence of layering and the 3-dimensional design of the filtering component (often called mesh pack) itself. If we want to predict the onstream behaviour of a polymer melt filter (a filter system used to filter a polymer in molten state) we also need to incorporate the non-Newtonian behaviour of the fluid itself. The presentation will give an overview of what is possible and how CFD can be used in root cause analysis of filter failures with very complex fluids such as polymers.

Paul Hulme

Paul Hulme is Business Development Manager with John Crane and has a special focus in polymer melt filtration. Paul has more than 20 years of experience in the industry, including previous roles for Bekaert Fiber Technologies & Bekaert Advanced Filtration, Porvair and Balston Filters. Paul attended Leigh College, Manchester Metropolitan University and The Chartered

Institute of Marketing and holds degrees in Mechanical Engineering and Marketing. If you would like to discuss any application questions with our team of filtration experts or find out how our products can increase your process efficiency, contact Paul at paul.hulme@johncrane.com.

Keywords:
Computational Fluid Dynamics
Polymers
Non-Newtonian Fluids
Metallic Filtration