



Hub Translation

Rhys Lloyd,* Subhaa Chandar Arumugam and Iyke Onyemelukwe *rhys.lloyd@strath.ac.uk
EPSRC CMAC Future Manufacturing Research Hub, University of Strathclyde, Glasgow, UK

Introduction

Routes to Translation

Translation focuses on getting results from research into forms that meet potential users' needs for practical use. Targeting end-user involvement, e.g. needs assessment, development work, validation/feedback, commercialization...



Training:
Webinars, expert workshops and e-learning modules



Staff exchanges:
PhD placements at companies or company staff at CMAC



Recruitment and outplacement:
Permanent/long-term experts and know-how embedded in companies

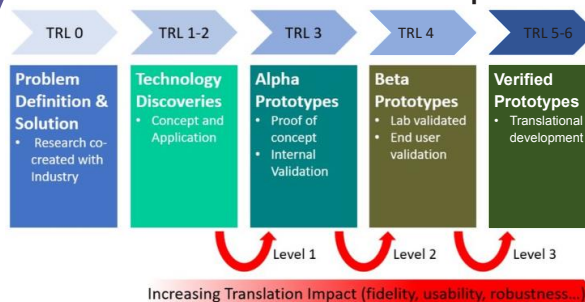


TRL based development and progression:
Strategic partnerships, collaboration with Tier 1/2, commercialisation via CMAC NF



Collaboration:
Proprietary 1:1 project collaborations, pre-competitive industry funded programs

Translation Road-Map



CMAC has instituted a stage-gate process as a means of managing technologies from low to high Technology Readiness Levels (TRL). Levels 1, 2 and 3 = translation of alpha, beta and verified prototypes to end users (for example CMAC Tier 1 partners).

Translated Activities

Training Webinars: Spherical Agglomeration Workflows

Bilal Ahmed, Rachel Smith, Kate Pitt, Cameron Brown and Ian Houson



2 Webinars:
122 Tier 1 and CMAC attendees



Technical support reports:
1 Shared and 1 in draft



Industrial application and scale-up:
12 projects, 8 APIs up to 5L reactor volume / 450 g product scale



Publications:
2 paper submissions and 5 in draft form



Workflows:
Mechanistic modelling and experimental driven

Expert Workshops: Integrated filtration and Washing Modelling

Sara Ottoboni and Bhavik Mehta



2 Workshops:
20 Tier 1 expert attendees



Technical support report:
Shared with workshop attendees



Publications:
3 Conference Contributions and 1 paper in draft form



Model:
Integrated filtration and washing gPROMS model with 6 different modes

Coming Soon

e-Learning Modules: Cooling Crystallisation Workflow

Cameron Brown, Blair Johnson, Murray Robertson, Humera Siddique, John McGinty, Magdalene Chong, Andrew Cashmore and Kenny Smith



Online CPD training course: For CMAC and Tier 1 partners



Workflow: Published and implemented seeded cooling crystallisation



Case studies:
Applied research examples



8 Expert lead modules:
7 Stages and 6 decision points



Interactive quizzes:
To reinforce learning



Q and A sections:
Commonly asked questions and where to find out more

Digital Translation: CMAC AssetStore

Subhaa Chandar Arumugam, Murray Robertson, Rhys Lloyd and Blair Johnson



Internal digital asset management system for CMAC models, workflows, databases, datasets, reporting tools and other technology assets. Promotes and facilitates sharing and collaboration of digital assets within CMAC and preparation of material for translation to industry.