EPSRC supported EngD project. Formulation and processing of alcohol free mouthwash

Colgate Palmolive / Boots Contract Manufacturing (BCM).

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Tax free bursary £18,800 p.a. plus fees

Colgate is a $16 billion dollar company with a core business in Oral Care. One of the key strategies for Colgate is to grow the mouthwash business to a billion dollar brand. Mouthwash has existed over 50 years. However, the industry as a whole still lacks the fundamental understanding of how each ingredient co-exists in the complex aqueous matrix. Mouthwashes generally consist of water, humectant, surfactant, flavour and actives, such as fluoride for fighting cavity and anti-microbial agents. Because of the high water content, effective control of microbial growth in mouthwashes is proven to be challenging. In addition, there are many manufacturing related challenges, such as cleaning and sanitization to minimize contamination risk and increasing process efficiency by leveraging a common base approach.

The overall objective of the research project is to establish fundamental understanding of the links between formula, production process and procedure in the manufacture of microbially robust mouthwash. For example characterizing key ingredient interactions within mouthwash formulation; processing of mouthwash; and cleaning of process plant. The learning will then be used to develop robust formulations with product stability during the manufacturing process and shelf storage. The results of the research program will help Colgate to deliver high quality mouthwash with desired benefits to the global consumers. In addition, it will help Colgate to enhance manufacturing efficiency and increase profit margin.

The student will receive first class training at the Colgate Palmolive Technology Center, in Piscataway NJ, USA and various partner manufacturing facilities around the world e.g. BCM. In addition to the exceptional training offered at University of Birmingham, the placement at Colgate will provide the opportunity for expert support and training in an industrial research environment. This collaboration will train a future researcher with vocational and practical industrial skills and experience outside of the academic setting maximizing their potential for professional development.

To be eligible for EPSRC funding candidates must have at least a 2(1) in Chemical Engineering or a 2(2) plus MSc. Applications from EU students who have studied in the UK are welcome as well as those from candidates with three years relevant industrial experience. Please email your c.v. to r.w.greenwood@bham.ac.uk. For more details on the Engineering Doctorate scheme please visit www.eng.bham.ac.uk/chemical/pg/engd.