# EPSRC supported EngD:

# Development of high throughput screening methodologies to determine the physical properties of cosmetic products and their effects on the skin

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## The No7 Beauty Company

## Tax free bursary of £ 25,000 p.a. plus fees paid

No7 Beauty Company have a need to develop lab suitable methods and techniques that allow the assessment of the performance of skin care formulations without needing to test on human volunteers.

Testing prototype formulations on human volunteers is the most accurate way to benchmark efficacy and in market performance but it is costly and time consuming and therefore not feasible to do for every promising prototype formulation. Currently we use historical product performance data and ingredient knowledge to predict which prototype formulations will be the most promising for further development, but this results in a bias towards formulation types that are known to work and risks the exclusion of prototypes where we have limited knowledge or experience which may result in unexpectedly beneficial formulations being excluded.

No7 Beauty company are interested in developing high throughput performance tests of skin care formulations which can demonstrate correlation to in-vivo skin performance and have the potential to be run in a GMP compliant formulation laboratory. Of interest are tests that are already available with validation data, proposals for developing new test methods with a clear hypothesis for their suitability, novel substrates and materials which can be combined with existing laboratory techniques. Ideally research would identify/develop substrates that can simulate the physical properties of skin and how they change when cosmetic products are applied. We are interested in researching screening tests for the following areas:

* Moisturisation - to predict in-vivo moisturisation measures
* SPF performance - needs to be an improvement over existing thin film UV absorbance measures.
* Instant improvements in skin appearance - texture or wrinkles, evenness of skin tone, firmness etc.
* Film effects e.g. resistance to pollutants, assessment of long wear properties. Skin barrier performance - to predict TEWL measurements.
* Sebum control effects - to predict shine reduction.
* Sensory properties beyond rheology assessments - in particular stickiness/tack.

Ideally the resulting tests should be suitable to screen multiple formulations and have the potential to be integrated into high throughput robotic formulation systems.

To be eligible for EPSRC funding candidates must have at least a 2(1) in an Engineering or Scientific discipline or a 2(2) plus MSc. To apply please email your cv to cdt-formulation@contacts.bham.ac.uk.

For details on the Engineering Doctorate scheme visit the [homepage](http://www.birmingham.ac.uk/schools/chemical-engineering/postgraduate/eng-d/index.aspx).

**Deadline: 30th June 2024**