## **REDESIGNING PPE:** enhancing the comfort and safety of healthcare workers wearing isolation gowns to treat patients with COVID-19

## Authors

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This design innovation project responds to the urgent need for research into the redesign of PPE isolation gowns, to be more fit for purpose, bespoke and reusable to enhance the experiences of healthcare workers (HCWs) treating COVID 19 patients. The proposal addresses the Engineering based UKRI question: "What new materials, design and manufacturing approaches should we start to consider in preparation for pandemics e.g. reusable PPE to replace single use?" Since the COVID 19 outbreak there has been adverse publicity about the shortage of appropriately designed PPE and particular dissatisfaction with the performance of disposable, oversized gowns, as highlighted by The Royal College of Nursing who described the generic "one size fits all" approach to PPE as being "problematic" and "restrictive" when worn for up to 12 hours during shifts. The lack of understanding of HCWs roles, practices and specific PPE needs has resulted in health authorities necessarily providing the best fit possible in a crisis situation and the PPE industry adopting a disposable 'non-circular' approach to meet demand, leading to human centred and environmental issues. Through collaboration with an established PPE manufacturer and leads in Clinical Procurement and Therapies from two NHS healthcare trusts, the investigators have estalished a research infrastructure to systematically focus on the design and production of a new 'reusable PPE isolation gown system' comprising multiple sizes By integrating expertise in practise research, clinical production and clinical practice, the investigations will focus on the technical, emotional durability and longevity of the PPE system.

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## Redesigning PPE:

Enhancing the comfort and safety of healthcare workers wearing isolation gowns to treat patients with COVID-19

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Images by David Ball



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Katherine Townsend (Ph.D) is Professor of Fashion and Textile Practice and a founder member of the Fashion and Textile Research Centre at Notlingham Trent University. Her current research (and Ph.D. supervision) is focused on the development of emotionally durable, environment-centred design methodologies. Projects include an ongoing ethnographic study into sustaining artisansi lextile crafts in Guatemala, supported by the Global Challenges Research Fund (GCRF 2018- 2022) and Designing Reusable PPE Gowns based on wearer experience, in collaboration with the NHS and industry partners (AHRC 2021-2023). Katherine is coeditor of Crafting Anatomies: Archives, Dialogues, Fabrications (Bloomsbury 2020) and the journal of Craft Research (Intellect).

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