

SOFCROLL⁽¹⁾: A NOVEL DESIGN FOR FUEL CELL CONSTRUCTION

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SOFCRoll (1,2) is a new solid oxide fuel cell design being developed at the University of St Andrews. Figure 1 is a schematic of the design and construction of a SOFCRoll. The gases are introduced at the centre of the fuel cell, and then flow around the spiral. In this way the outer layers of the SOFCRoll not only provide structural support, but are also an active element of the fuel cell. The new geometry of the SOFCRoll therefore removes the need for support components associated with the two leading designs of planar and tubular geometry. This should provide much higher power densities together with reduced space requirements.

With the production of any fuel cell there are many technical difficulties to overcome. With this new geometry many of the existing challenges have been eliminated or simplified, however with the introduction of a few new challenges.

This paper gives an overview of the production and design of the SOFCRoll fuel cell.

REFERENCES

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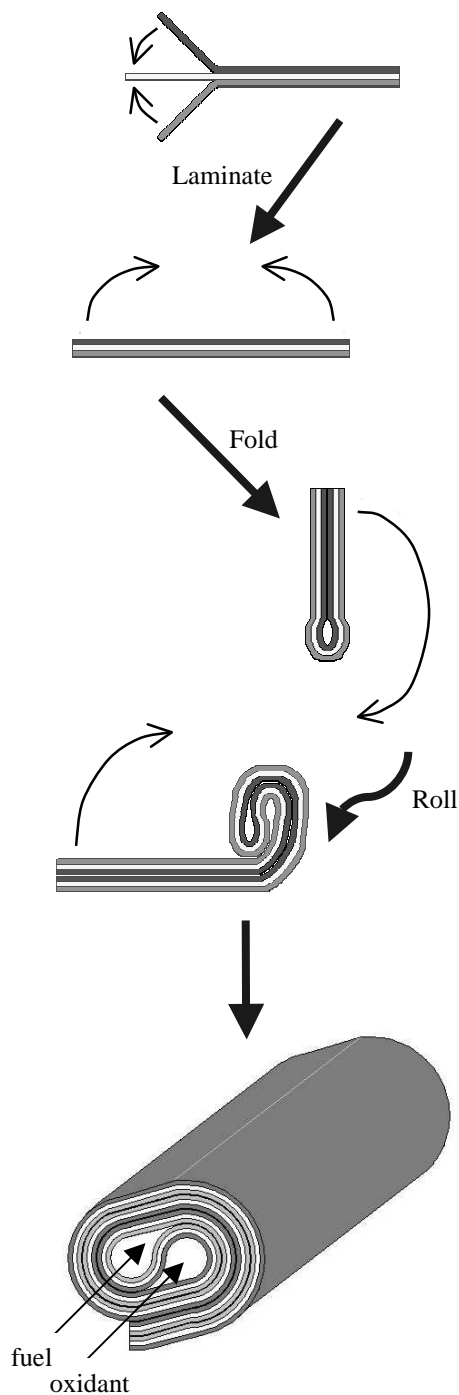


Figure 1: Schematic of the construction and final geometry of SOFCRoll.