

SYSTEMS AND METHODS FOR INFILTRATING POROUS CERAMIC MATRIX COMPOSITE (CMC) PREFORMS

ABSTRACT

Systems (100) and methods for infiltrating porous ceramic matrix composite (CMC) preforms (102) to form CMC articles are disclosed. One method may include positioning the porous CMC preform (102) in an opening (110) of a die set (104) for an infiltration system (100), and flowing a molten densifier (118) over the porous CMC preform (102) in a first flow direction to infiltrate a plurality of voids (138, 170) formed between each of a plurality of ply stacks (134, 136) of the CMC preform (102). The method may also include flowing the molten densifier (118) over the porous CMC preform (102) in a second flow direction, distinct from the first flow direction, to infiltrate the plurality of voids (138, 170) formed between each of the plurality of ply stacks (134, 136) of the CMC preform (102). The second flow direction may be substantially parallel to a predetermined, unidirectional material orientation of at least one ply stack (134) of the plurality of ply stacks (134, 136) of the CMC preform (102).

[Figure 2]