

ABSTRACT

SYSTEMS AND METHODS FOR PRE-STRESSING BLADES

A system and methods are provided for pre-stressing blade elements for a gas turbine engine. In one embodiment, a method includes rotating a blade element relative to an axis. The method may also include controlling rotational speed of the blade element to generate residual stress in the blade element. The method may also include rotating multiple blade elements and fan blade units to generate residual stress. Blade elements may be rotated to exceed a maximum operating speed of the blade element to 120% of the maximum operating speed of the blade element.

Fig. 1