

ABSTRACT

EXPOSED ELECTRODE NEGATIVE AIR ION DEVICE WITH FIBROUS MAT SURFACE MOUNTABLE IN AN EXPOSED ENVIRONMENT

An exposed electrode negative air ion device, either stand-alone or mounted in an exposed environment **56** as part of a negative air ion panel system **50**. Each device comprises: (a) an electronics module **22**, the electronics module **22** including a negative voltage generator **22B**; and (b) an exposed electrode **10**, the exposed electrode **10** including a mat surface **11** of intertwined individual fibres electrically connected to the negative voltage generator **22B**. The mat surface **11** has a minimum mean resistance of R_{MIN} to restrict a maximum capacitive current discharge below a capacitive current discharge detection threshold. The negative voltage generator **22B** is configured to generate a negative voltage source **23** from a power supply **21** within a set of electrical parameters. The set of electrical parameters includes a maximum preset negative voltage of V_{MAX} and a maximum operating current, the maximum operating current set below or equal to a direct current detection threshold.

FIG. 1