CLAIMS

1. A sensor connecting bridge (1) configured to be used in connection with a corrosion measuring device (20) for monitoring of airborne corrosivity, said sensor connecting bridge comprising

- at least one connector assembly (3a,3b;4a,4b) configured to enable electrical connection between said measuring device (20) and at least one sensor coupon (30a,30b) inserted into the sensor connecting bridge, and
- a computer readable memory comprising information about the sensor bridge identity.

2. The sensor connecting bridge of claim 1, wherein the at least one connector assembly includes a first connector part (3a,4a) configured to connect the sensor connecting bridge (1) to a connector (23a,23b) in the measuring device (20).

3. The sensor connecting bridge of claim 1 or 2, wherein the at least one connector assembly includes a second connector part (4a,4b) comprising a sensor coupon receiving slot (2a,2b) configured to receive a connection end (33) of a sensor coupon (30a,30b).

4. The sensor connecting bridge of any one of claims 1-3, comprising two connector assemblies (3a,3b;4a,4b) arranged in parallel, allowing two sensor coupons (30a,30b) to be inserted into the sensor connecting bridge.

5. The sensor connecting bridge of any one of the preceding claims, wherein the at least one connector assembly (3a,3b;4a,4b) is at least partially arranged within a casing (5), and a sensor coupon protection plate (6) is arranged on the casing adjacent the sensor coupon receiving slot(s) (2a,2b), said protection plate (6) being configured to shield and protect an active front side of the sensor coupon(s) when inserted into the sensor connecting bridge.

6. The sensor connecting bridge of claim 5, wherein one or more ventilation openings adapted to allow air circulation are provided in the protection plate or in the sensor connecting bridge.

7. A sensor coupon (30) adapted to be used in connection with the sensor bridge (1) of any one of claims 1-6, comprising a non-conductive substrate (31) and a metal track (32) applied on the substrate, wherein the sensor coupon has a connection end (33) at a first edge (34) of the substrate, and the metal track applied to the substrate comprises at least one elongated metal track having an elongated and curved or undulating shape, and includes at least two end portions (35a-c,35a'-c'), comprising connection areas (36a-c,36a'-c'), located at first edge (34) of the substrate, and wherein the substrate has a surface roughness of 5-600 Angstrom and the entire metal film track including the connection areas has been applied by thin film technology, and the length L of the coupon is 2.5-4.0 cm, and the metal track comprises two or more M-shaped parts, where each M-part is made up by a track including straight sections forming an "M" by turning 90-degrees six times to form the M-shape.

8. The sensor coupon of claim 7, wherein the metal film track has a thickness of 400-1000 nm.

9. The sensor coupon of claim 8, wherein the metal track is applied by sputtering or vapour deposition or a combination thereof.

10. The sensor coupon of any one of claims 7-9, wherein a first part (37) of the metal film track is, is covered by a protective layer (38), which is impermeable to corrosive substances, and at least one second part (39) thereof is not covered to allow it to be exposed to corrosive substances during use.

11. The sensor coupon of any one of claims 7-10, wherein the active sensor surface comprises a corrodible metal, preferably copper or silver.

12. The sensor coupon of any one of claims 7-11, wherein the substrate includes a gripping area (49), which is free from metal track, and which is preferably located at a second end of the substrate opposite to the first connection end (33) of the substrate.

13. The sensor coupon of any one of claims 7-12, wherein the coupon has a width dimension (W) parallel to said first edge (34) and a length dimension (L) perpendicular to said first edge, where W:L is 0.8-1.2, preferably 0.9-1.1.

14. The sensor coupon of any one of claims 7-13, wherein the substrate comprises glass, alumina or silicon.

15. A sensor connecting bridge arrangement comprising a sensor connecting bridge (1) according to claims 1-6 and at least one sensor coupon (30) according to claims 7-14, inserted into the at least one connector (3a,3b;4a,4b).

16. The sensor connecting bridge arrangement of claim 15, comprising two sensor coupons (30a,30b), where a first sensor coupon has a metal track comprising a first metal, and a second sensor coupon has a metal track comprising a second metal, said first and second metals being different, preferably copper and silver, respectively.

17. A corrosion measuring device (20) for monitoring of airborne corrosivity, configured to receive and connect to a sensor connecting bridge (1) of any one of claims 1-6, said measuring device comprising

- a least one connector (23a,23b) configured to enable electrical connection between the measuring device (20) and the sensor connecting bridge (1); and
- an electronic circuit allowing determination of resistance of a metal track of at least one sensor coupon (30a,30b) held by the sensor connecting bridge (1); and
- an electronic circuit comprising an interface configured to retrieve sensor bridge identity information from the memory in the sensor connecting bridge.

18. The corrosion measuring device of claim 17, comprising an electronic circuit that allows determination of resistance of the metal track(s) of the sensor coupon(s) by applying current or voltage to the metal track(s).

19. The corrosion measuring device of claim 17 or 18, comprising a bridge receiving recess (24) configured to receive and accommodate the sensor bridge (1) and any sensor coupons carried by the sensor connecting bridge, wherein the at least one connector (23a,23b) is accessible from the recess.

20. The corrosion measuring device of claim 19, wherein the bridge receiving recess (24) is arranged at a bottom end on the front side (22) of the device, when positioned in an upright position, and is open at the front and at the bottom, and has closed rear wall (26), side

walls (27a,b), and top wall (27c), and wherein the rear wall (26) is configured to extend past any sensor coupon carried by the sensor connecting bridge (1), and the side walls extend past forward of said sensor coupons, when a sensor bridge carrying sensor coupons is accommodated in the recess.

21. The corrosion measuring device of any one of claims 17-20, further comprising a microprocessor configured to retrieve corrosivity information based on the determination of the difference in resistance of a not covered metal track versus a covered track of a sensor coupon.

22. The corrosion measuring device of any one of claims 17-21, further comprising a display (25) having a graphical user interface (GUI).

23. The corrosion measuring device of any one of claims 14-19, further comprising a communication unit arranged to transmit corrosivity information to a cloud-based user communication interface.

24. A passive sensor connecting bridge holder (41) for offline corrosivity determination, configured to receive and accommodate a sensor connecting bridge (1) of any one of claims 1-6 and any sensor coupons carried by the sensor connecting bridge, said holder comprising a bridge receiving recess (44) configured to receive and accommodate the sensor bridge (1) and any sensor coupons carried by the sensor connecting bridge, wherein the bridge receiving recess (44) is arranged at a bottom end on the front side (42) of the holder (41), when held in an upright position, and is open at the front and at the bottom, and has closed rear wall (46), side walls (47a,b), and top wall (47c), and wherein the rear wall (46) is configured to extend past any sensor coupon carried by the sensor connecting bridge (1), and the side walls extend past forward of said sensor coupons, when a sensor bridge carrying sensor coupons is accommodated in the recess.

25. A monitoring system (21) for monitoring of airborne corrosivity in one or more different locations, said system comprising a corrosion measuring device (20) according to any one of claims 17-23, one or more sensor connecting bridges (1a,1b) according to any one of claims 1-6, a set of sensor coupons according to any one of claims 7-11, and optionally one or more passive sensor bridge holders (41) according to claims 24-25 configured to

accommodate a sensor connecting bridge arrangement during time periods between active measuring occasions.

26. A method of monitoring of airborne corrosivity in one or more different locations using the monitoring system (21) of claim 25, comprising the steps of:

1) Inserting fresh sensor coupons (30a,30b) according to any one of claims 7-11 into one or more sensor connecting bridge(s) (1) according to any one of claims 1-6, to form one or more sensor connecting bridge arrangement(s) according to claims 15 or 16 (901);
2) Calibrating the sensor connecting bridge arrangement(s) by determining resistance in the fresh sensor coupons by means of a corrosion measuring device (20) according to any one of claims 17-23 (902);
3) Placing the sensor connecting bridge arrangement(s) in desired location(s) (903);
4) After a predetermined time period, bringing the corrosion measuring device (20) to the location where the sensor connecting bridge arrangement is (904a); or, bringing the sensor connecting bridge arrangement to the corrosion measuring device (20) (904b);
5) Inserting the sensor connecting bridge into the corrosion measuring device and determining the corrosion of the sensor coupons (905).
6) Returning the sensor connecting bridge arrangement(s) to its former desired location(s) to continue the measurement at step 3 (906).