CLAIMS

1. A treatment process for enhancing the hydrophilic properties of a glass material, characterized in that it consists of an ion bombardment where:

- the ions of the ion beam are selected from the ions of the elements of the list consisting of nitrogen (N) and oxygen (O);

- the acceleration voltage, AV, of the ions is greater than or equal to 10 kV and less than or equal to 100 kV;

- the temperature of the glass material is less than or equal to the glass transition temperature;

- the dose of ions per unit of surface area is located within a range of between $5x10^{15}$ ions/cm^2 and 10^{18} ions/cm^2, in particular less than or equal to 10^{17} ions/cm^2.

2. The hydrophilic treatment process as claimed in claim 1, characterized in that the dose of ions per unit of surface area and the acceleration voltage of the ions are determined so that the surface atomic concentration is greater than or equal to an atomic concentration threshold of 0.1% for nitrogen and an atomic concentration threshold of 2.5% for oxygen.

3. The hydrophilic treatment process as claimed in any one of the preceding claims, characterized in that the ions of the ion beam are nitrogen (N), the acceleration voltage AV is greater than or equal to 10 kV and the dose of ions per unit of surface area is greater than or equal to a value $DNmin = (AV/20)^2$, where DNmin is expressed in 10^{16} ions/cm^2 and the acceleration voltage AV is expressed in kV.

4. The hydrophilic treatment process as claimed in any one of claims 1 to 2, characterized in that the ions of the ion beam are oxygen (O), the acceleration voltage AV is greater than or equal to 10 kV and the dose of ions per unit of surface area is greater than or equal to a value DOmin = $10.(AV/20)^{1.5}$, where DOmin is expressed in 10^{16} ions/cm^2 and the acceleration voltage AV is expressed in kV.

5. The hydrophilic treatment process as claimed in any one of the preceding claims, characterized in that the hydrophilic treatment process of the invention comprises a preliminary stage where the dose of ions per unit of surface area and the acceleration voltage of the ions are determined according to the following stages:

a. an acceleration voltage of the ions between 10 kV and 100 kV is chosen;

b. a dose of ions per unit of surface area of between $5x10^{15}$ ions/cm^2 and 10^{17} ions/cm^2 is chosen;

c. a treatment according to the invention is carried out under the conditions chosen;

d. the contact angle of a drop of water on the glass material thus treated is measured;

e. the measured contact angle is compared with a desired value for contact angle;

f. if the measured contact angle is greater than the desired value for contact angle, a treatment according to the invention is again carried out with a dose of ions per unit of surface area double that previously used;