## CLAIMS

1. An electro-conductive embedding medium for a biological sample comprising:
    - from 60% to 99% wt. of a glycol dimethacrylate selected from ethylene glycol dimethacrylate, diethylene glycol dimethacrylate, triethylene glycol dimethacrylate, propylene glycol dimethacrylate and butylene glycol dimethacrylate;
    - a polyalkylene glycol diacrylate; and
    - a radical polymerization initiator.

2. The electro-conductive embedding medium according to claim 1, further comprising at least one additive; preferably comprising at least one heavy metal salt or lanthanide salt.

3. The electro-conductive embedding medium according to claim 1 or claim 2, wherein the glycol dimethacrylate is triethylene glycol dimethacrylate.

4. The electro-conductive embedding medium according to any one of claims 1 to 3, wherein the polyalkylene glycol diacrylate is selected from polyethylene glycol diacrylate, polypropylene glycol diacrylate and polybutylene glycol diacrylate; preferably the polyalkylene glycol diacrylate is polypropylene glycol diacrylate.

5. The electro-conductive embedding medium according to any one of claims 1, 3 and 4, comprising:
    - from 60% to 99% wt. of triethylene glycol dimethacrylate;
    - from more than 0% to 38% wt. of polypropylene glycol diacrylate; and
    - from 0.1% to 2% wt. of a radical polymerization initiator.

6. The electro-conductive embedding medium according to any one of claims 1, 3 and 4, comprising:
    - 79% wt. of triethylene glycol dimethacrylate;
    - 20% wt. of polypropylene glycol diacrylate; and
    - 1% wt. of benzoin methyl ether.

7. The electro-conductive embedding medium according to any one of claims 2 to 4, wherein the at least one heavy metal salt, more preferably comprising osmium and/or uranyl acetate.

8. The electro-conductive embedding medium according to any one of claims 1 to 7, further comprising at least one biological sample, preferably a vitrified and/or chemically fixed and/or dehydrated biological sample.

9. An electro-conductive imaging material comprising at least one biological sample embedded in a polymer matrix resulting from the polymerization of the embedding medium according to any one of claims 1 to 8.

10. The electro-conductive material according to claim 9, preserving the internal fluorescence, the protein activity and/or the antigenic specificity of the embedded biological sample.

11. A method for imaging by microscopy a biological sample comprising the following steps:

(i) fixing and/or dehydrating the biological sample;

(ii) infiltrating on the biological sample of step (i) an electro-conductive embedding medium according to any one of claims 1 to 8;

(iii) polymerizing the mixture obtained at step (ii), resulting in an electro-conductive imaging material;

(iv) imaging by light microscopy and/or electron microscopy the electro-conductive imaging material of step (iii).

12. The method according to claim 11, further comprising a step of microtomy or ultra-microtomy on the electro-conductive imaging material.

13. Use of an electro-conductive embedding medium according to any one of claims 1 to 8, or of an electro-conductive imaging material according to claim 9 or claim 10, for imaging a biological sample by microscopy, preferably by light and/or electron microscopy.

14. A kit for preparing a biological sample to be imaged in microscopy, comprising:

- a first container comprising (a) a glycol dimethacrylate selected from ethylene glycol dimethacrylate, diethylene glycol dimethacrylate, triethylene glycol dimethacrylate, propylene glycol dimethacrylate and butylene glycol dimethacrylate;; and (b) a polyalkylene glycol diacrylate;
- a second container comprising radical polymerization initiator;

or comprising:

a container comprising (a) an glycol dimethacrylate selected from ethylene glycol dimethacrylate, diethylene glycol dimethacrylate, triethylene glycol dimethacrylate, propylene glycol dimethacrylate and butylene glycol dimethacrylate;; (b) a polyalkylene glycol diacrylate; and (c) a radical polymerization initiator;

and mixing means.