CLAIMS

1. A shielding structure, comprising at least one shielding component, wherein the shielding component comprises a nickel-plated carbon fiber film, the nickel-plated carbon fiber film comprises:

at least one carbon fiber base fabric, wherein metal colloid particles are adhered to a surface of the carbon fiber base fabric; and

at least one nickel metal layer, arranged above a naked surface of the carbon fiber base fabric and a surface, away from the carbon fiber base fabric, of the metal colloid particles,

wherein the shielding component further comprises:

at least one carbon fiber fabric, wherein the nickel-plated carbon fiber film is arranged on a side surface of the carbon fiber fabric, and a thickness of one or more the carbon fiber fabric is between 0.13 and 1.0 mm,

wherein the shielding component further comprises:

at least one metal net, arranged between the nickel-plated carbon fiber film and the carbon fiber fabric, the metal net is a copper net, and a thickness of the metal net is between 0.005 and 0.015 mm,

at least one permalloy layer, arranged on a surface, away from the metal net, of the nickel-plated carbon fiber film, a thickness of the permalloy layer is between 0.05 and 0.20 mm, the shielding component comprises a plurality of stacked nickel-plated carbon fiber films, a total thickness of the plurality of nickel-plated carbon fiber films is between 0.7 and 1.2 mm.

2. The nickel-plated carbon fiber film as claimed in claim 1, wherein the metal colloid particles are Pd colloid particles or Ag colloid particles.

~~3. The shielding structure as claimed in claim 1, wherein the shielding component further comprises:~~

~~at least one metal net, arranged between the nickel-plated carbon fiber film and the carbon fiber fabric.~~

~~4. The shielding structure as claimed in claim 3, the metal net is a copper~~

~~net, and a thickness of the metal net is between 0.005 and 0.015 mm.~~

~~5~~3. The shielding structure as claimed in claim 1, wherein the shielding structure comprises a plurality of the shielding components, each of the plurality of shielding components is stacked, the shielding structure further comprises:

at least one adhesive layer, arranged between any adjacent two of the shielding components and between any adjacent two of structure layers in each of the shielding components.

~~6~~4. The shielding structure as claimed in claim ~~5~~3, a raw material of the adhesive layer comprises 80-120 parts by weight of epoxy resin, 60-80 parts by weight of curing agent, and 0.5-2.5 parts by weight of accelerant, the curing agent is methyl tetrahydrophthalic anhydride, and the accelerant is boron trifluoride ethylamine.

~~7~~5. A manufacturing method of a nickel-plated carbon fiber film, wherein the manufacturing method comprises:

step S1, providing at least one carbon fiber base fabric;

step S3,arranging metal colloid particles on the carbon fiber base fabric; and

step S4,arranging at least one nickel metal layer on a naked surface of the carbon fiber base fabric and a surface, away from the carbon fiber base fabric, of the metal colloid particles,

wherein between the step S1 and the step S3, the manufacturing method further comprises:

step S2, treating surfaces of the carbon fiber base fabric, as to remove organic matters on the surface of the carbon fiber base fabric,

wherein the step S2 comprises the following steps:

soaking the carbon fiber base fabric with acetone;

soaking the carbon fiber base fabric soaked with the acetone with mixed solution of a hydrofluoric acid and a strong acid; and

washing the soaked carbon fiber base fabric with water,

wherein the strong acid is a sulfuric acid, a hydrochloric acid or a nitric acid,

a molar ratio of the hydrofluoric acid and the strong acid is between 1:3 and 1:1, a volume concentration of the mixed solution is between 5% and 15%, and in the step S2, a time of soaking the carbon fiber base fabric with the mixed solution is between 5min and 30 min.

~~8~~6. The manufacturing method as claimed in claim 5, wherein the step S3 comprises:

step S31, soaking the carbon fiber base fabric with a dilute acid solution of a reducing metal salt; and

step S32, activating the carbon fiber base fabric treated in the step S31 with a dilute acid solution of an oxidizing metal salt, as to generate the metal colloid particles.

~~9~~7. The manufacturing method as claimed in claim ~~8~~6, the oxidizing metal salt is $PdCl_2$ or $AgNO_3$, and the reducing metal salt is $SnCl_2$.

~~10~~8. The manufacturing method as claimed in claim ~~8~~6, wherein the dilute acid solution of the reducing metal salt is a first hydrochloric acid solution, and in the first hydrochloric acid solution, a mass concentration of the $SnCl_2$ is between 4% and 8%.

~~11~~9. The manufacturing method as claimed in claim ~~10~~8, a soaking temperature of the step S31 is between 25 ºC and 40 ºC, and a soaking time is between 20 min and 50 min.

~~12~~10. The manufacturing method as claimed in claim ~~8~~6, wherein the oxidizing metal salt is $PdCl_2$, the dilute acid solution of the oxidizing metal salt in the step S32 is a second hydrochloric acid solution, and in the second hydrochloric acid solution, a mass concentration of the $PdCl_2$ is between 0.02% and 0.04%.

~~13~~11. The manufacturing method as claimed in claim ~~12~~10, a temperature of the dilute acid solution of the $PdCl_2$ is between 25ºC and 40ºC, and a time of the activating is between 10 min and 50 min.

~~14~~12. The manufacturing method as claimed in claim ~~8~~6, wherein

after soaking the carbon fiber base fabric with the dilute acid solution of

$SnCl_2$, the step S31 further comprises:

washing the carbon fiber base fabric with water,

wherein the oxidizing metal salt is $PdCl_2$, after activating the carbon fiber base fabric with the dilute acid solution of $PdCl_2$, the step S32 further comprises:

washing the carbon fiber base fabric with water.

~~15~~13. The manufacturing method as claimed in claim ~~7~~5, wherein the step S4 comprises:

adopting a plating solution, and arranging the nickel metal layer with an electroless nickel plating.

~~16~~14. The manufacturing method as claimed in claim ~~15~~13, the plating solution comprises 40-60 parts by weight of nickel salt, 40-60 parts by weight of reducing agent, 80-120 parts by weight of complexing agent, 40-60 parts by weight of buffering agent and 0.15-0.25 parts by weight of surfactant, a pH value of the plating solution is 10-11.

~~17~~15. The manufacturing method as claimed in claim ~~15~~13, wherein the nickel salt comprises nickel sulfate, the reducing agent comprises sodium hypophosphite, the complexing agent comprises sodium citrate, the buffering agent comprises ammonium chloride, and the surfactant comprises sodium dodecyl benzene sulfonate, a temperature of the plating solution is between 40ºC and 60ºC, an implementation time of the electroless nickel plating is between 20 and 50 min.

~~18~~16. A preparation method of a shielding structure, the preparation method comprises a manufacturing process of at least one shielding component, wherein the manufacturing process comprises the manufacturing method of the nickel-plated carbon fiber film as claimed in any one of claims ~~7~~5 to ~~17~~15.

~~19~~17. The preparation method as claimed in claim ~~18~~16, wherein the manufacturing process further comprises:

providing a carbon fiber fabric; and

arranging at least one metal net and the nickel-plated carbon fiber film on

the carbon fiber fabric sequentially,

the manufacturing process further comprises:

arranging at least one permalloy layer on a surface, away from the metal net, of the nickel-plated carbon fiber film, as to form a pre-shielding component.

~~20~~18. The preparation method as claimed in claim ~~19~~17, wherein the preparation method further comprises:

hot pressing on the pre-shielding component or hot pressing on a plurality of stacked pre-shielding components, as to form the shielding structure,

wherein a process of the hot pressing comprises:

arranging an adhesive between the adjacent structure layers to be hot pressed, as to form a pre-hot press structure;

pressing the pre-hot press structure; and

curing the adhesive in the pre-hot press structure after pressing,

the adhesive comprises 80-120 parts by weight of epoxy resin, 60-80 parts by weight of curing agent, and 0.5-2.5 parts by weight of accelerant, the curing agent is methyl tetrahydrophthalic anhydride, the accelerant is boron trifluoride ethylamine,

a pressure of the pressing is between 0.4 MPa and 0.8 MPa, and

the curing is heat curing, and a temperature of the heat curing is between 120ºC and 150ºC, and a time of the heat curing is between 1 h and 3 h.