wherein the rotating rod is rotating at greater than about 20 rpm, and has tangential surface speed that is from about 1 to about 20% of the tangential speed of the moving substrate. It has been surprisingly found that by this process wherein the rotating rod is located in the delivery slot of the die, the rod acts as a metering device and the coating composition is "sheared down" and "smeared" on to the substrate in a manner that permits the formation of ultrathin melt coatings.

In a second aspect, there is provided a process for making articles with a melt coated layer thereon, the process comprising the steps of:

(a) conveying a molten coating composition comprising a polymer through a die slot having a thickness less than 35 mils (~~875~~ 900 micrometers);

(b) directly contacting the molten composition to the entry side of a nip point between a rotating rod having a diameter less than 3 inches (7.6 cm) and a moving substrate supported on a backup roller, wherein a sufficiently small nipping pressure is employed such that the surface of the backup roller is deformed by no more than a depth of 20 mils (500 micrometers); and

(c) obtaining a substrate with a melt coated layer thereon on the exit side of the nip point;

wherein the rotating rod and the compressible backup roller are each rotating in the direction of motion of the moving substrate;

wherein the rotating rod is rotating at greater than 20 rpm, and has surface speed that is between about 1 and 20% of the speed of the moving substrate; and

wherein the molten coating composition is selected from the group consisting of:

(a) one or more acrylic polymers having a collective molecular weight of at least 200,000, the composition being free of solvents and containing no more than 1% by weight of gelled acrylic polymer; or

(b) one or more thermoplastic elastomers having a collective melt viscosity measured at any temperature suitable for hot-melt coating and at shear rates less than 100 sec^{-1} or frequencies less than 100 rad/sec is greater than 20,000 cP (20 Pa-s); or

(c) one or more natural rubbers or synthetic rubbers having a collective molecular weight of at least 200,000 g/mol and which is not a thermoplastic elastomer, and having a melt viscosity measured at any temperature suitable for hot-melt coating and at shear rates less than 100 sec^{-1} or frequencies less than 100 rad/sec greater than 50,000 cP (50 Pa-s); or

(d) one or more nonelastomeric thermoplastic polymers having a collective molecular weight of from 50,000 to 3,000,000 g/mol, the composition being free of solvents.

The method of the disclosure employs melt processing, i.e., application of heat and mechanical pressure on the composition and relative movement of the substrate, to extrude the coating composition into desired location and thickness on the substrate. Unlike previously known methods typically used for coating high molecular weight, high viscosity PSA and other compositions, no liquid carrier medium or solvent is used. As a result, no drying of the resultant coating is necessary, thereby eliminating potentially costly further operations, such as special drying and solvent recovery systems, as well as

20. The article of claim 1 wherein the melt coated layer comprises one or more nonelastomeric thermoplastic polymers selected from the group consisting of polyolefins and aliphatic polyesters.

21. The article of claim 1 wherein the melt coated layer comprises one or more semicrystalline nonelastomeric thermoplastic polymers.

22. A process for making articles with a melt coated layer thereon, the process comprising the steps of:

(a) conveying a molten coating composition comprising a polymer through a die slot having a thickness less than 35 mils (~~875~~ 900 micrometers);

(b) directly contacting the molten composition to the entry side of a nip point between a rotating rod having a diameter less than 3 inches (7.6 cm) and a moving substrate supported on a backup roller, wherein a sufficiently small nipping pressure is employed such that the surface of the backup roller is deformed by no more than a depth of 20 mils (500 micrometers); and

(c) obtaining a substrate with a melt coated layer thereon on the exit side of the nip point;

wherein the rotating rod and the compressible backup roller are each rotating in the direction of motion of the moving substrate;

wherein the rotating rod is rotating at greater than 20 rpm, and has surface speed that is between 1 and 20% of the speed of the moving substrate; and

wherein the molten coating composition is selected from the group consisting of:

(a) one or more acrylic polymers having a collective molecular weight of at least 200,000, the composition being free of solvents and containing no more than 1% by weight of gelled acrylic polymer; or

(b) one or more thermoplastic elastomers having a collective melt viscosity measured at any temperature suitable for hot-melt coating and at shear rates less than 100 sec^{-1} or frequencies less than 100 rad/sec is greater than 20,000 cP (20 Pa-s); or

(c) one or more natural rubbers or synthetic rubbers having a collective molecular weight of at least 200,000 g/mol and which is not a thermoplastic elastomer, and having a melt viscosity measured at any temperature suitable for hot-melt coating and at shear rates less than 100 sec^{-1} or frequencies less than 100 rad/sec greater than 50,000 cP (50 Pa-s); or

(d) one or more nonelastomeric thermoplastic polymers having a collective molecular weight of from 50,000 to 3,000,000 g/mol, the composition being free of solvents.

23. The process of claim 22 wherein the die slot has a thickness less than 15 mils (380 micrometers).