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(54) **METHOD AND SYSTEM FOR BONDING A SEMICONDUCTOR CHIP ONTO A CARRIER USING MICRO-PINS**

(75) Inventors: **Sangmin Lee**, Santa Barbara, CA (US); **Michael Gurvitch**, Stony Brook, NY (US); **Serge Luryi**, Setauket, NY (US)

(73) Assignee: **Research Foundation of State University of New York**, Stony Brook, NY (US)

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See application file for complete search history.

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Primary Examiner—David Vu
(74) *Attorney, Agent, or Firm*—Baker Botts L.L.P.

(57) **ABSTRACT**

An anisotropically conductive layer 'ACL' for mechanical and electrical bonding of two circuit containing structures, such as a flip chip and carrier is disclosed. The ACL is formed of a rigid insulating substrate or membrane with a top and bottom planar surfaces formed with a plurality of pins therein. The pins extend beyond the top and bottom surfaces so that a portion of each pin is exposed. The pins provide electrical connection between contact terminals or pads of the flip chip and carrier and additionally provide mechanical support between the flip chip and carrier so that the flip chip can undergo post-bonding processing without substantial deformation or breaking. A method of electrically and mechanically bonding the flip chip and carrier and a method of making a semiconductor device using the ACL is also disclosed.

2 Claims, 11 Drawing Sheets