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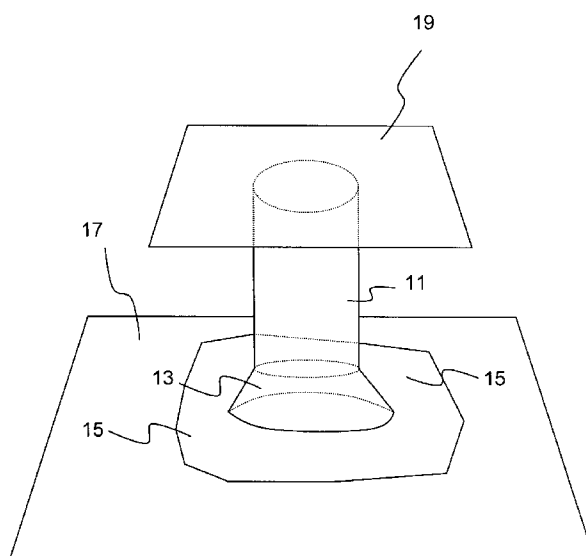
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(54) Title: SYMMETRIC, SPATULAR ATTACHMENTS FOR ENHANCED ADHESION OF MICRO-AND NANO-FIBERS



(57) Abstract: A fabricated nano-structure includes a substrate, a supporting stalk, a node, and at least two spatular plate portions. The first end of the supporting stalk is connected to the substrate. The supporting stalk has a diameter range of about 50 nanometers to about 2 microns. A node is disposed at the second end of the supporting stalk. At least two spatular plate portions are connected to the node. The spatular plate portions have planar geometries and are radially distributed about the node. The spatular plate portions have a ratio of a maximum plate thickness to a maximum plate length of at most about 1:20. The maximum plate length is at least about 100 nanometers. The spatular plate portions adhere to a contact surface using intermolecular forces when in contact with the contact surface.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/76582

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C09J 5/00 (2007.10)

USPC - 156/57; 428/357

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - C09J 5/00 (2007.10)

USPC - 156/57; 428/357

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(USPT,PGPB,EPAB,JPAB); Google

Search Terms Used:

thickness of gecko spatula, gecko spatula, asperity, thick or width, asperity, plate, protrusion

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2005/0181170 A1 (FEARING et al.) 18 August 2005 (18.08.2005), para [0003-0104]	1,13 and 15 ----- 2-12, 14 and 16
Y	Hansen, W.R. et al. "Evidence for Self-Cleaning in Gecko Setae." Proceedings of the National Academy of Sciences of the United States of America, January 11, 2005, vol. 102, no. 2, pages 385-389	2-6, 8, 11, 14 and 16
Y	US 2005/0148984 A1 (LINDSAY et al.) 07 July 2005 (07.07.2005), fig. 1	7, 10-12
Y	US 2002/0060506 A1 (KUHLMANN-WILSDORF) 03 May 2002 (03.05.2002), para [0068]	9

☐ Further documents are listed in the continuation of Box C.

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"&" document member of the same patent family

Date of the actual completion of the international search

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