Riconoscimento:

To Nicola M. Pugno

Griffith Medal & Prize 2017

In recognition of distinguished work that has made or is making a notable contribution to any branch of materials science

Nicola has more than 320 international journals papers and a vast number of plenary talks. Nicola has innovated extensively in his field especially in the field of Nanomechanics, across several disciplines thanks to his multidisciplinary background in Engineering (where he has a Master and a PhD degree), as well as in Physics (Master degree) and in Biology (PhD). He has pioneering works in carbon nanotubes, graphene, bio-inspired materials, such as gecko-inspired super adhesive surfaces, lotus leaf-inspired super-hydrophobicity and self-cleaning surfaces, limpet teeth-inspired super-strong materials, spider silk-inspired super-tough materials and bone-inspired self-healing materials. He has developed the toughest fibers reaching 1400 J/g and has discovered the strongest biological material. He has developed new theories such as Quantized Fracture Mechanics, an extension of the celebrated Linear Elastic Fracture Mechanics of Griffith, from where he has removed the hypothesis of the continuous crack growth, in order to treat any defect size and shape and thus also the fracture of nanoscale objects. The theory has been further extended in fatigue and dynamic fracture. Another theory he has developed is that of multiple peeling, whereas before only single peeling problems were tractable. Peeling has a huge implication in understanding different topics from mechanics of composites to biological adhesion. He has received ERC grants to support technology transfer of his work into commercial applications and he is currently working with several high tech industries developing new markets for several different new materials. He also introduced the new concept of Bionicomposites, demonstrating that feeding spiders with graphene or nanotubes results in their spinning of a bionic silk, incorporating the nanomaterials, with superior structural characteristics.

Previous awardees of the Griffith medal are:

1965 - Sir Alan Cottrell
1966 - J. E. Gordon
1967 - Professor Frederick Charles Frank, later Sir Charles Frank
1968 - Professor David Tabor
1969 - Sir Geoffrey Taylor
1970 - Sir Hugh Ford
1971 - J. W. White
1972 - L. R. G. Treloar
1973 - Sir Nevill Mott
1974 - Professor Anthony Kelly
1975 - Sir Monty Finniston
1976 - J. H. Chesters
1977 - Professor Edgar H. Andrews
1978 - Sir Alastair Pilkington
1979 - Sir Peter Hirsch
1980 - J. T. Scales

1981 - Professor Michael F. Ashby
1982 - Professor I. M. Ward
1983 - Professor Robert W. Cahn
1984 - Professor W. C. Wake
1985 - Professor Derek Hull
1986 - Nicholas J. Phillips
1987 - E. D. Hondros
1988 - Professor M. J. Bevis
1989 - Professor K. H. Jack
1990 - Professor P. L. Pratt
1991 - Professor William Bonfield
1992 - D. V. Wilson
1993 - C. Gurney
1994 - Professor Anthony G. Evans
1995 - G. W. Greenwood
1996 - Professor A. J. Kinloch
1997 - G. C. Wood
1998 - Dr. J. Johnson
1999 - Professor J. F. Knott
2000 - Professor R. C. Pond
2001 - Professor Colin John Humphreys
2002 - Professor R. J. Young
2003 - R. W. Whatmore
2004 - Professor T. W. Clyne
2005 - Professor D. J. Bacon
2006 - Dr. P. S. Bate
2007 - Professor R. O. Ritchie
2008 - Professor Neil Alford
2009 - Professor Lindsay Greer
2010 - Professor Robin Grimes
2011 - Professor David Hayhurst
2012 - Professor Molly Stevens
2013 - Dr. Robert Broomfield
2014 - Professor Norman Fleck
2015 - Professor Ivan Parkin
2016 - Professor Yiu Wing Mai