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Dense columnar packings of hard spheres- An application to nanotube-confined fullerenes

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Dense packings of equal-sized hard spheres in cylindrical confinement serve as a model for a variety of quasi-1D systems, such as nanotube-confined fullerenes and colloidal crystal wires. In this talk, the author will (i) describe a method of sequential deposition for constructing a whole range of globally or locally densest structures, where most of these structures are helical, and (ii) report our recent theoretical results on the existence of such structures for nanotube-confined fullerenes.

Biography

Ho-Kei Chan obtained a 1st class degree in Engineering Physics (2002) from the Hong Kong Polytechnic University and a PhD in Nonlinear and Liquid Crystal Physics (2007) from the University of Manchester, followed by Post-doctoral research in Hong Kong, Ireland and England. He has developed a method of sequential deposition for constructing the densest possible cylindrical packings of equal-sized spheres. Such structures are found in a variety of quasi-1D systems, such as fullerenes inside nanotubes and colloidal crystal wires. Chan He has published in various areas of soft matter physics and physical chemistry.

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