

From Atom Mirrors to Atom Chips to Time Crystals

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We present an overview of recent research in our Atom Optics lab in Melbourne, including the development of magnetic optical elements for manipulating beams of ultra-cold atoms, magnetic microstructures on an atom chip for trapping periodic arrays of ultra-cold atoms, and time crystals using ultra-cold atoms bouncing on an atom mirror.

Peter Hannaford obtained his PhD in condensed matter physics from the University of Melbourne. In 2001 he moved from CSIRO to establish a new Centre for Atom Optics and Ultrafast Spectroscopy at Swinburne University of Technology in Melbourne. He is currently Professor Emeritus and Distinguished University Professor in the Optical Sciences Centre at Swinburne. His research interests include atom optics, ultracold quantum gases and time crystals. Honours and awards include the Walter Boas Medal, the Royal Society of Victoria Research Medal, the Centenary Medal of the Australian Government, the Beattie Steel Medal and Fellowship of the Australian Academy of Science.

