CORA Cork Open Research Archive
Cartlann Taighde Oscailte Chorcaí

Title	Nonlinear force dependence on optically bound micro-particle arrays in the evanescent fields of fundamental and higher order microfibre modes
Authors	Maimaiti, Aili;Holzmann, Daniela;Truong, Viet Giang;Ritsch, Helmut;Nic Chormaic, Síle
Publication date	2016-07-25
Original Citation	Maimaiti, A., Holzmann, D., Truong, V. G., Ritsch, H. and Nic Chormaic, S. (2016) 'Nonlinear force dependence on optically bound micro-particle arrays in the evanescent fields of fundamental and higher order microfibre modes', Scientific Reports, 6, 30131 (10pp). doi:
Type of publication	Article (peer-reviewed)
Link to publisher's version	https://www.nature.com/articles/srep30131 - 10.1038/srep30131
Rights	© 2016, Maimaiti, A. et al. This work is licensed under a Creative Commons Attribution 4.0 International License. The images or other third party material in this article are included in the article's Creative Commons license, unless indicated otherwise in the credit line; if the material is not included under the Creative Commons license, users will need to obtain permission from the license holder to reproduce the material. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/ - https://creativecommons.org/licenses/by/4.0/
Download date	2026-10-30 20:05:44
Item downloaded from	https://hdl.handle.net/10468/4165



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Nonlinear force dependence on optically bound micro-particle arrays in the evanescent fields of fundamental and higher order microfibre modes

Aili Maimaiti[1,2], Daniela Holzmann[3], Viet Giang Truong[1], Helmut Ritsch[3]

& Síle Nic Chormaic*[1]

[1]Light-Matter Interactions Unit, Okinawa Institute of Science and Technology Graduate University, Onna, Okinawa 904-0495, Japan
[2]Physics Department, University College Cork, Cork, Ireland
[3]Institute for Theoretical Physics, University of Innsbruck, Technikerstrasse 25, A-6020, Innsbruck, Austria
*Correspondence to: sile.nicchormaic@oist.jp

Description for the supplementary movies:

Supplementary Movie S1. Propulsion of bounded three polystyrene particles in the evanescent fields of the fundamental mode (FM) of a 2 μm fibre. The power at the fibre waist is 30 mW.

Supplementary Movie S2. Propulsion of bounded four polystyrene particles in the evanescent fields of the fundamental mode (FM) of a 2 μm fibre. The power at the fibre waist is 30 mW.

Supplementary Movie S3. Propulsion of bounded three polystyrene particles in the evanescent fields of the higher order modes (HOMs) of a 2 μm fibre. The power at the fibre waist is 30 mW.

Supplementary Movie S4. Propulsion of bounded four polystyrene particles in the evanescent fields of the higher order modes (HOMs) of a 2 μm fibre. The power at the fibre waist is 30 mW.