a

b

Extended Data Figure 1 | Waveguide coupling parameters and illustration of a 1D pump. a, The overall scale A (dashed red line) and exponential decay prefactor γ (solid orange line) that describe the inter-waveguide coupling as a function of their separation s: $t(s) = A\exp(-\gamma s)$. The parameters were obtained using a thorough calibration procedure (see Methods) and are plotted a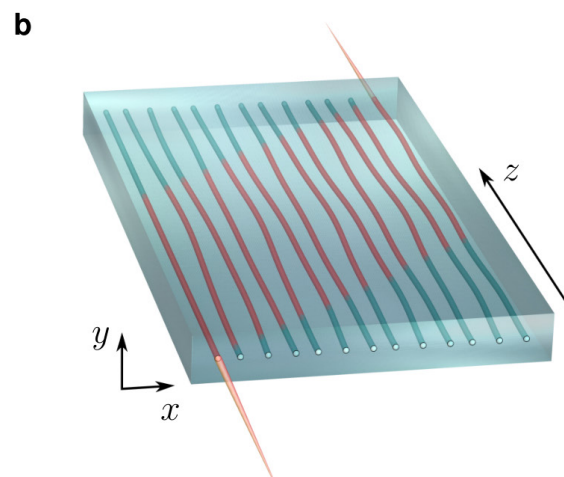s a function of wavelength. **b**, An additional illustration of the waveguide spacing used to implement our topological pump. To simplify the diagram, we show a 1D waveguide array, which corresponds to an implementation of a 1D pump. This configuration can be thought of as resulting from a constant y slice through the full 2D waveguide array.