YO laser cooling and trapping with an improved repumping scheme YUEWEI WU, ALEJANDRA COLLOPY, SHIQIAN DING, IAN FINNERAN, JILA, University of Colorado Boulder, LOIC ANDEREGG, BENJAMIN AUGENBRAUN, JOHN DOYLE, Harvard University, JUN YE, JILA, University of Colorado Boulder — Using a new repumping scheme for laser cooling of yttrium II oxide (YO), we have increased the photon scattering rate by 60% on the cooling transition. With this improved cycling scheme, we have improved the number of slowed molecules (with velocity $<10$ m/s) by 20 fold from a beam of YO from a single-stage cryogenic buffer gas cell. These molecules can be readily loaded into a radio frequency (5 MHz) magneto-optical trap. We will report the characterization of the MOT.

1NIST, NSF, Gordon and Betty Moore foundation, United states department of energy, United states air force

Yuewei Wu
JILA, University of Colorado Boulder

Date submitted: 26 Jan 2018

Electronic form version 1.4