(51) **Int. Cl.**
G01N 33/49 (2006.01)
G01N 33/487 (2006.01)
G01N 1/40 (2006.01)

(52) **U.S. Cl.**
CPC ***B01L3/502761*** (2013.01); ***G01N 1/4077*** (2013.01); ***G01N 33/48728*** (2013.01); ***G01N 33/491*** (2013.01); *B01D 2221/10* (2013.01); *B01L 2200/0631* (2013.01); *B01L 2200/0636* (2013.01); *B01L 2200/0652* (2013.01); *B01L 2300/0816* (2013.01); *B01L 2300/0864* (2013.01); *B01L 2400/0439* (2013.01); *B01L 2400/0487* (2013.01); *G01N 2001/4094* (2013.01)

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,727,129 B2 * 5/2014 Rose B01D 21/283 209/455
8,991,614 B2 * 3/2015 Rose B01D 21/283 209/455
2010/0126922 A1 5/2010 Takahashi et al.

OTHER PUBLICATIONS

Glynne-Jones et al., "Multi-Modal Particle Manipulator to Enhance Bead-Based Bioassays," Ultrasonics 50, 2010, pp. 235-239.
Haake et al., "Micro-Manipulation of Small Particles by Node Position Control of an Ultrasonic Standing Wave," Ultrasonics, vol. 40, 2002, pp. 317-322.
Hawkes et al., "Filtration of Bacteria and Yeast by Ultrasound-Enhanced Sedimentation," J. of Appl. Microbiology 82, 1997, pp. 39-47.
Jung et al., "Acoustic Particle Filter for Adjustable Effective Pore Size for Automated Sample Preparation," Anal. Chem 80, 2008, pp. 8447-8452.
Laurell et al., "Chip Integrated Strategies for Acoustic Separation and Manipulation of Cells and Particles," Chem. Soc. Rev., 2007, pp. 492-506.

* cited by examiner