**181st Meeting of the Acoustical Society of America**

**Filtering Microplastics Trash from Water with Acoustic Waves #ASA181**

*Prototype speaker system efficiently separates out microplastics from polluted water.*

EMBARGOED for release until November 29 at 6:10 p.m. Eastern U.S.

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SEATTLE, November 29, 2021 -- Microplastics are released into the environment by cosmetics, clothing, and industrial processes or from larger plastic products as they break down naturally.

The pollutants eventually find their way into rivers and oceans, posing problems for marine life. Filtering and removing the small particles from water is a difficult task, but acoustic waves may provide a solution.

Dhany Arifianto, of the Institut Teknologi Sepuluh Nopember in Surabaya, Indonesia, will discuss a filtration prototype in his presentation, "Using bulk acoustic waves for filtering microplastic on polluted water," on Monday, Nov. 29 at 6:10 p.m. Eastern U.S. at the Hyatt Regency Seattle. The presentation is part of the 181st Meeting of the Acoustical Society of America, taking place Nov. 29 to Dec. 3.

Arifianto and his team used two speakers to create acoustic waves. The force produced by the waves separates the microplastics from the water by creating pressure on a tube of inflowing water. As the tube splits into three channels, the microplastic particles are pressed toward the center as the clean water flows toward the two outer channels.

The prototype device cleaned 150 liters per hour of polluted water and was tested with three different microplastics. Each plastic was filtered with a different efficiency, but all were above 56% efficient in pure water and 58% efficient in seawater. Acoustic frequency, speaker-to-pipe distance, and density of the water all affected the amount of force generated and therefore the efficiency.

The acoustic waves may impact marine life if the wave frequency is in the audible range. The group is currently studying this potential issue.

"We believe further development is necessary to improve the cleaning rate, the efficiency, and particularly the safety of marine life," said Arifianto.

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**----------------------- MORE MEETING INFORMATION -----------------------**

**USEFUL LINKS**

Main meeting website: <https://acousticalsociety.org/asa-meetings/>

Technical program: <https://eventpilotadmin.com/web/planner.php?id=ASAFALL21>

Press Room: <http://acoustics.org/world-wide-press-room/>  
Follow conference highlights with social media hashtag [#ASA181](https://twitter.com/search?q=%23ASA181)

**WORLDWIDE PRESS ROOM**

In the coming weeks, ASA's Worldwide Press Room will be updated with additional tips on dozens of newsworthy stories and with lay language papers, which are 300-500 word summaries of presentations written by scientists for a general audience and accompanied by photos, audio, and video. You can visit the site during the meeting at <http://acoustics.org/world-wide-press-room/>.

**PRESS REGISTRATION**

We will grant free registration to credentialed journalists and professional freelance journalists. If you are a reporter and would like to attend, contact the AIP Media Line at 301-209-3090. For urgent requests, staff at [media@aip.org](mailto:media@aip.org?subject=178th%20Meeting%20of%20the%20Acoustical%20Society%20of%20America) can also help with setting up interviews and obtaining images, sound clips or background information.

**VIRTUAL MEDIA BRIEFINGS**

Press briefings will be held virtually during the conference. Credentialed media can register in advance by emailing [media@aip.org](mailto:media@aip.org) and include your full name and affiliation in the message. The official schedule will be announced as soon as it is available and registered attendees will be provided login information via email.

**ABOUT THE ACOUSTICAL SOCIETY OF AMERICA**

The Acoustical Society of America (ASA) is the premier international scientific society in acoustics devoted to the science and technology of sound. Its 7,000 members worldwide represent a broad spectrum of the study of acoustics. ASA publications include The Journal of the Acoustical Society of America (the world's leading journal on acoustics), Acoustics Today magazine, books, and standards on acoustics. The society also holds two major scientific meetings each year. For more information about ASA, visit our website at <http://www.acousticalsociety.org>.