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## Acoustic alignment of supramolecular nanofibers by audible sound

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The question of whether the sound vibration of a medium can bring about any kind of molecular or macromolecular events is a long-standing scientific controversy. Solutions containing anisotropic macroscopic objects such as polymers and colloidal particles have been known to give ultrasonically (>1,000,000 Hz) induced birefringence, due to induced alignment of those objects in solution. However, such molecular events using audible sound, the frequency of which is much lower (20–20,000 Hz) than that of ultrasonic waves, has not been reported. Here, we present the design of a supramolecular nanofiber that in solution becomes preferentially aligned parallel to the propagation direction of audible sound.<sup>[1,2]</sup> This phenomenon can be used to spectroscopically visualize sound-induced vibrations of liquids and may find application in a wide range of vibration sensing technologies.

## Biography

Akihiko Tsuda is an associate professor of Kobe University, Department of Chemistry, Graduate School of Science. He received his BS degree in Organic Chemistry from Shinshu University in 1997, and then received his MS degree in Supramolecular Chemistry from Osaka University in 1999. He obtained his PhD in Organic Chemistry from Kyoto University in 2002. He then began an academic career in the University of Tokyo as an assistant professor. In 2008, he was promoted to an independent Associate Professor of Kobe University. He has received The Chemical Society of Japan Award for Young Chemists in 2007.

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