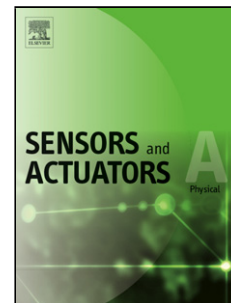


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# Enhanced Thermo-Electro-Mechanical Characteristics of Purified P(VDF-TrFE) Films for Ultrasonic Transducers

Cheon-Ho PARK<sup>a</sup>, Quang Van DUONG<sup>b</sup>, Yong-Ju MOON<sup>c</sup>, Kanglyeol HA<sup>d</sup>, Seung Tae CHOI<sup>b,\*</sup>

<sup>a</sup>Development 2 Team, Technical Center, S&T Motiv Co., Ltd., 5 Songjung-Ri, Chulma-Myun, Kijang-Kun, Busan 46002, Republic of Korea

<sup>b</sup>School of Mechanical Engineering, Chung-Ang University, 84 Heukseok-Ro, Dongjak-Gu, Seoul 06974, Republic of Korea

<sup>c</sup>Research Engineer Maritime R&D Lab, LIG Nex1 Co., Ltd., 333 Pangyo-Ro, Bundang-Gu, Seongnam-City, Gyeonggi-Do, 13488, Republic of Korea

<sup>d</sup>Department of Physics, College of Natural Sciences, Pukyong National University, 45 Yongso-Ro, Nam-Gu, Busan 48513, Republic of Korea

\*Corresponding author: Seung Tae CHOI

School of Mechanical Engineering, Chung-Ang University, 84 Heukseok-Ro, Dongjak-Gu, Seoul 06974, Republic of Korea. Tel: +82-2-820-5275. Email: stchoi@cau.ac.kr

## Highlights

- Highly crystalline P(VDF-TrFE) films were fabricated by introducing purification and uniaxial stretching processes.
- The stretching and purification processes increase the crystallinity of the P(VDF-TrFE) films by about 16.2% and 2.2%, respectively.
- The stretching process greatly increases the thermal stability of the P(VDF-TrFE) films so that the purified and stretched films exhibits a variation within 6% in the piezoelectric constant ( $d_{33}$ ) during the storage test at 70 °C for 96 h.
- UTs were also fabricated with the purified P(VDF-TrFE) films.
- The sensitivity and bandwidth of the UTs with the purified and stretched film has a 4.5 dB increase and 24.3% decrease, respectively, compared to UTs fabricated with the purified film without stretching.

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