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Controlled one dimensional poly (3-hexythiophene) nano fiber for high performance organic field effect transistor SUNG WON LEE, UN-YONG JEONG, Yonsei University — We demonstrate here how to fabricate cylinder shape, one dimensional organic field effect transistor for high performance field effect transistor device. To reduce the size and increase component density in circuit we used electro-spinning as a fabrication method. Coaxial nozzle was used for cylindrical semiconductor and gate insulator defines. Regio-regular Poly (3-hexythiophene) and poly vinyl phenol was used as semiconductor and gate insulator respectively. Electrical performance is not reported here because of environmental instability. However, we expect good electrical performance will be shown shortly because this device form cylindrical conduction channel compare to thin film type field effect transistor. Here we propose electro-spinning is an easy one step process to fabricate one dimensional polymer field effect transistor.

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