

<b>NAME. &amp; FACULTY</b>		<b>TITLE</b>			
SHINBO, Kazunari Dep. of Electrical & Electronic Eng.		Organic field-effect transistor			
<b>FIELD</b>	<b>IT</b>	<b>NANO</b>	<b>BIO · LIFE</b>	<b>ENVIRO · ENERGY</b>	<b>OTHERS</b>

**ABSTRACT**

Characteristics of organic field-effect transistors can be controlled by insertion of materials such as V<sub>2</sub>O<sub>5</sub>, which shows electron transfer with organic materials. Typical device structure is shown in Fig.1. V<sub>2</sub>O<sub>5</sub> layer was inserted between SiO<sub>2</sub> insulator layer and p-type copper phthalocyanine (CuPc) layer. This device was worked as a transistor when positive gate voltage was applied, although negative gate voltages should be applied to conventional CuPc FETs. Furthermore, the drain currents are about 10 times larger than conventional CuPc FETs. This method can be useful for controlling and/or improving OFET characteristics.

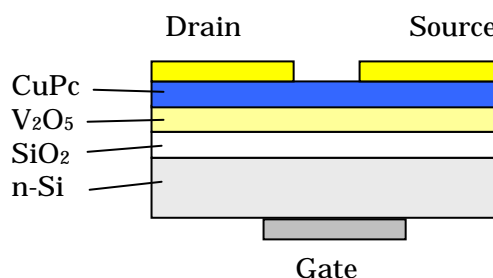


FIG 1 Organic field-effect transistor with V<sub>2</sub>O<sub>5</sub> thin layer.

**Flow Chart for Strategic Partnership University-Industry-Government to be Developed**

