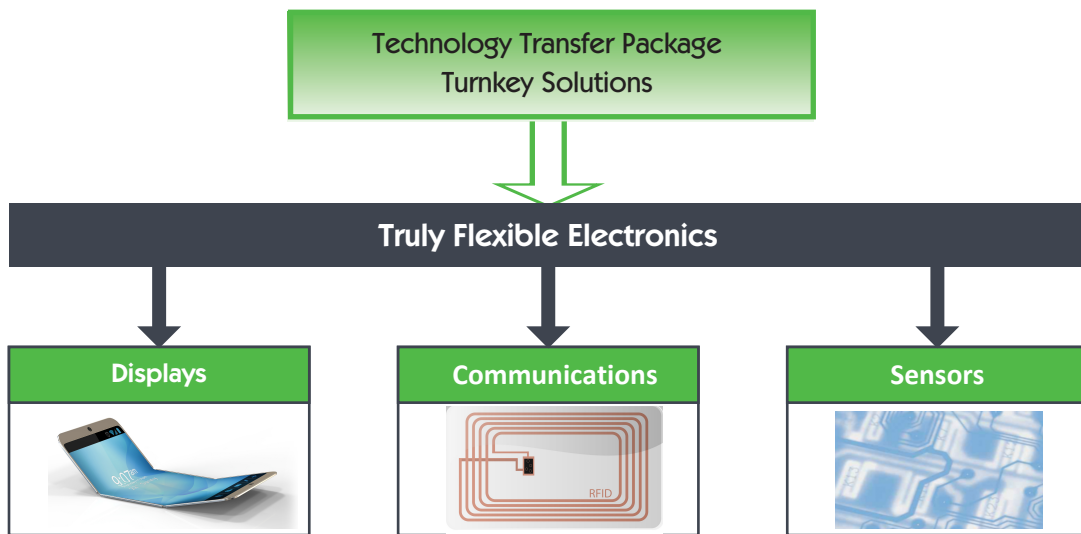




## Truly Flexible Thinking

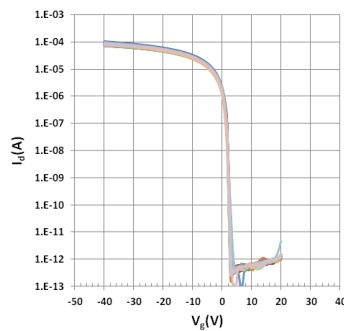
Our proprietary *tru-FLEX™* semiconductor material range enables display manufacturers to obtain industry leading thin film transistor (TFT) performance in a ultra-flexible form while decreasing manufacturing complexity and cost. SmartKem offers a unique combination of proprietary materials, expertise, support technologies and services to enable the scale up manufacture of truly flexible TFT based product.



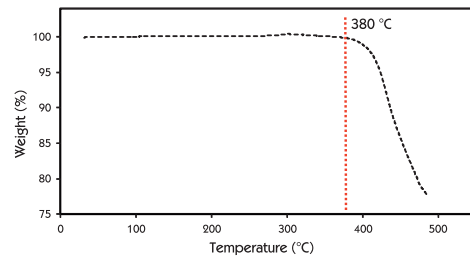
SmartKem's *tru-FLEX™* semiconductor allows companies to use our unique knowledge, intellectual property and engineering support for initial pilot trials and validation of our technology. SmartKem also offers bespoke technology transfer packages and turn-key solutions specific to each customers TFT process, production and application needs for pre-production and eventual full adoption of *tru-FLEX™*.

Electronic Properties	
Semiconductor Type	p-Type
HOMO/LUMO	Confidential
Temperature Stability	> 250°C
Air Stability	Excellent
Process Temperature	Ambient
Device shelf life	Excellent
Bias Stress Data	Excellent
Recommended Contact Type(s)	Au or most alternatives
Uniformity	< 6% $\Delta V_{th}$ or $\Delta \mu$ across 4" Substrate [Spin Coat]
Thin Film Flexibility	Excellent
Compatibility with solvents	Does not require use of chlorinated solvents
Recommended Dielectrics	CYTOP/Teflon AF 1600 & others

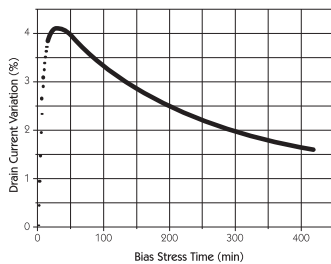
Typical TFT Device Data	
Device Structure	TGBC Au/OGI/OSC/Au-Ti/PEN
Deposition Method	Spin Coat
Mobility	4-5 $\text{cm}^2/\text{V.s}$ [for channel $L = 100\mu\text{m}$ to $L=4\mu\text{m}$ ]
$V_{th}$	0.1 - 0.5 V [dependent on stack architecture]
Leakage Current	$1 \times 10^{13-15}$



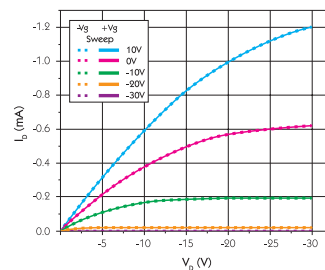
Transfer and mobility curves for SmartKem tru-FLEX TGBC TFT



SmartKem's materials exhibit extreme thermal stability under TGA



SmartKem tru-FLEX TGBC TFT's exhibits minimal variation under negative bias stress



SmartKem tru-FLEX TGBC TFT's exhibit minimal hysteresis with forward and reverse sweep

Whether you are highly experienced in flexible displays and electronics or a new entrant to the field wishing to enter into the OEM supply chain, SmartKem can support your requirements. Contact us to find out how we can help you realise the full potential of this new world of flexible technology.

#### SmartKem Limited

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