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Wall-mounted electric complementary inverter

Overview

Is ambipolar complementary inverter based on cofacial vertical OECTs?

In this work, we introduce an active sensing node based on cofacial vertical OECTs forming an ambipolar complementary inverter. The inverter, which shows a voltage gain of 28, is composed of two OECTs on opposite side walls of a single active area, resulting in a footprint identical to a planar OECT.

How is a complementary inverter made?

A traditional complementary inverter is typically made by separately wiring two different transistors, p- and n-type transistors (Fig. 2A) (36, 37). The source of the p-type OECT is connected to VDD, while the source of the n-type OECT is wired to ground. The gates of the two OECTs are wired together externally to create a common input.

What are OECT-based complementary inverters?

OECT-based complementary inverters have been previously realized by Sun and coworkers (36) using a poly- (3-carboxy-pentyl-thiphene) (P3CPT) p-type OECT and a poly (benzimidazobenzophenanthroline) (BBL) n-type OECT.

Should you choose a complementary inverter?

Ideal complementary inverters can be more desirable, as they offer lower power consumption and, for digital logic, improved noise margins (36).

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Here, we present a case study of such a direct topological comparison between different inverter technologies. Starting from a measured set of TFT characteristics, five ...

1 Introduction The complementary inverter is a basic functional module of digital circuits, usually consisting of p-type and n-type metal ...

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In this Article, we report integrated organic complementary inverters and complementary organic ring oscillators using n-type organic permeable single- and dual-base ...

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