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(54) **TUNNELING ENABLED FEEDBACK FET**

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(57) **ABSTRACT**

Example embodiments relate to tunneling enabled feedback field effect transistors (FETs). One example system includes a feedback field effect transistor. The feedback field effect transistor includes a source region. The feedback field effect transistor also includes a channel region. Additionally, the feedback field effect transistor includes a drain region. Further, the feedback field effect transistor includes a gate. The channel region is between the source region and the drain region. The source region, the channel region, and the drain region include a semiconductor material with a band-gap that is smaller than 0.9 eV. The source region or the drain region has a dopant concentration that is smaller than $5 \times 10^{19} \text{ cm}^{-3}$. The gate is positioned along the channel and isolated from the channel.

