

عنوان مقاله:

The Necessity of Repurposing the Existing Gas Pipelines Considering Hydrogen Embrittlement: Making Iranian Gas Grid Viable for Integration Across the Green Hydrogen Market

محل انتشار:

چهارمین کنفرانس بین المللی فناوری های جدید در صنایع نفت، گاز و پتروشیمی (سال: 1401)

تعداد صفحات اصل مقاله: 9

نویسنده:

Vahid Gerami - Nikan Energy Co, Tehran, Iran

خلاصه مقاله:

Existing natural gas pipelines are prone to component failures due to hydrogen embrittlement (HE) when they are repurposed for transferring pure hydrogen or a mixture of natural gas and hydrogen. A large number of contemporary studies confirmed the multiple effects and activity of different HE mechanisms in steels and iron including hydrogen-enhanced localized plasticity (HELP) and hydrogen-enhanced decohesion (HEDE). In this paper, the possibility of green hydrogen export from Iran to the EU countries through the existing pipelines and required modifications to mitigate hydrogen embrittlement problems are studied. This research is conducted in Tehran, Iran.

کلمات کلیدی:

Hydrogen Embrittlement, Hydrogen damage, Green Hydrogen, Hydrogen Export, Natural Gas Pipeline, aged pipeline

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1679407>

