



## Your browser is outdated

Update your browser to view ScienceDirect correctly.

Your technical details and browser version:

**Request ID:** 97694e5b3b59c527-FRA

**IP:** 178.214.4.5

**UTC time:** 2025-08-29T04:29:12+00:00

**Browser:** Mozilla/5.0 (X11; Linux x86\_64) Miniature.io/6.0

AppleWebKit/537.36 (KHTML, like Gecko) QtWebEngine/5.12.4

Chrome/69.0.3497.128 Safari/537.36

