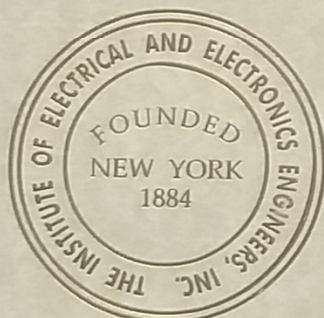


IEEE Certifies that

Joao Paulo S. Catalao

has been elevated to the grade of
Fellow

for contributions to power system operations and demand response



1 January 2022

A handwritten signature in black ink, appearing to read "Rajiv" or similar.

President

A handwritten signature in black ink, appearing to read "John W. Waly".

Secretary