



## SPECIAL SESSION VIII

### DC grids applications, technologies and protection

ORGANIZED AND CHAIRED BY

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Throughout the whole 20th century (the “electrical century”) the standard pattern has been the production of energy in large power plants and its transmission and distribution through even larger AC systems. Recently, such paradigm has been completely overturned due to the explosive growth of Distributed Energy Resources (DERs) and Energy Storage Systems (ESS), which has been strongly incentivized to achieve decarbonization targets, required by both individual countries and multinational institutions. Such energy resources are strongly intermittent, whereby the need to manage large high variable power flows, which may also reverse direction, results in significantly operational problems for the conventional AC power systems. For this reason, the solution might be represented by DC power grids at any voltage level.

This special session will be oriented on the advanced technologies, applications, and devices for the DC grids of the future.

Topics include, but not limited to, the following:

- **Low voltage dc microgrids;**
- **High voltage direct current transmission systems technology;**
- **Dc grids protections;**
- **Dc grids cables and overhead lines;**
- **Ac/dc converter station equipment;**
- **Power electronic converters for dc grids applications;**
- **Control strategies of power electronic converters for dc grids and microgrids.**