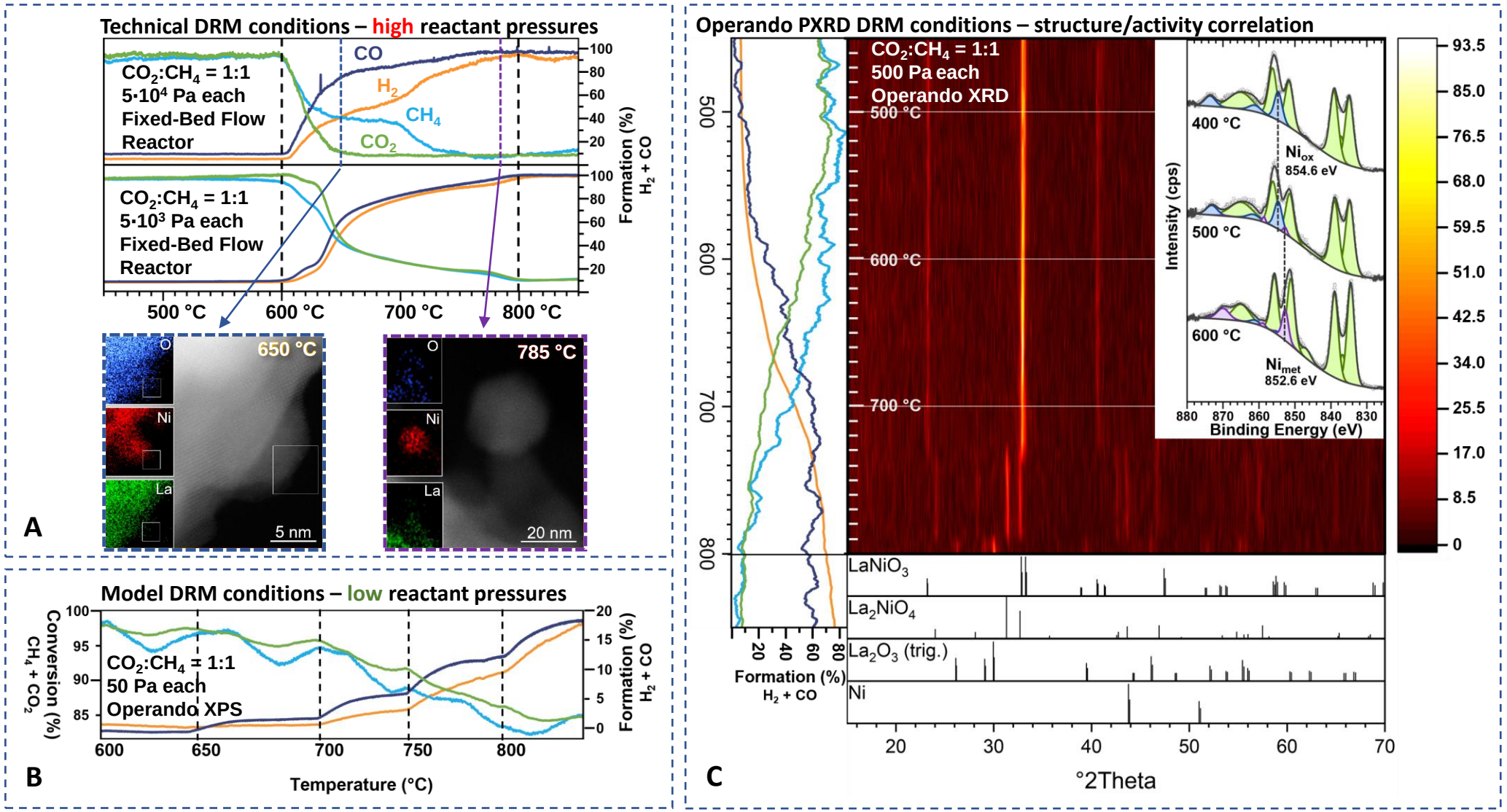

Technical DRM conditions – high reactant pressures
CO2:CH4 = 1:1
5·10⁴ Pa each
Fixed-Bed Flow
Reactor
CO
H2
CH4
CO2
CO2:CH4 = 1:1
5·10³ Pa each
Fixed-Bed Flow
Reactor
Formation (%)
H2 + CO
500 °C
600 °C
700 °C
800 °C
650 °C
785 °C
O
Ni
La
5 nm
20 nm
A
Model DRM conditions – low reactant pressures
Conversion (%)
CH4 + CO2
CO2:CH4 = 1:1
50 Pa each
Operando XPS
Formation (%)
H2 + CO
Temperature (°C)
B
Operando PXRD DRM conditions – structure/activity correlation
CO2:CH4 = 1:1
500 Pa each
Operando XRD
500 °C
600 °C
700 °C
Intensity (cps)
400 °C
Niox
854.6 eV
500 °C
600 °C
Nimet
852.6 eV
Binding Energy (eV)
LaNiO3
La2NiO4
La2O3 (trig.)
Ni
Formation (%)
H2 + CO
°2Theta
C