

Fig. 1 – Schematic diagram of the cell for electrochemical, generated stress and EA measurements

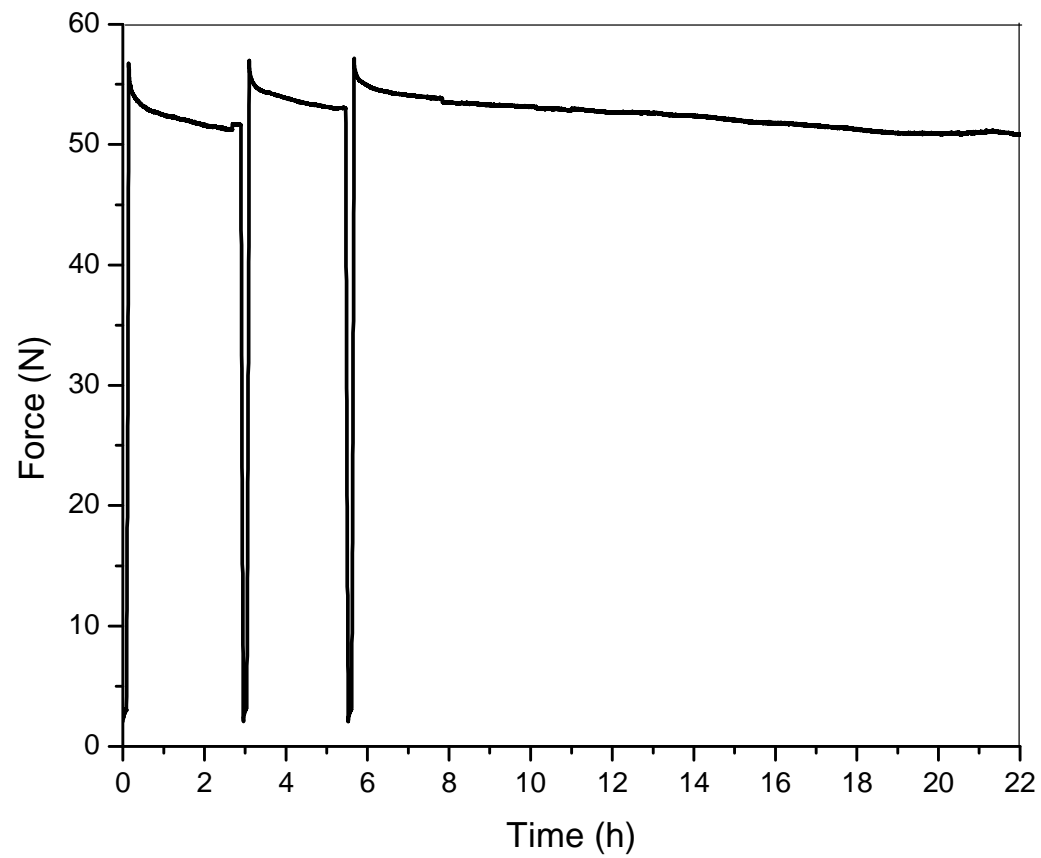


Fig. 2 – Evolution of the force on the cell without WE after constant displacements (0.18mm)

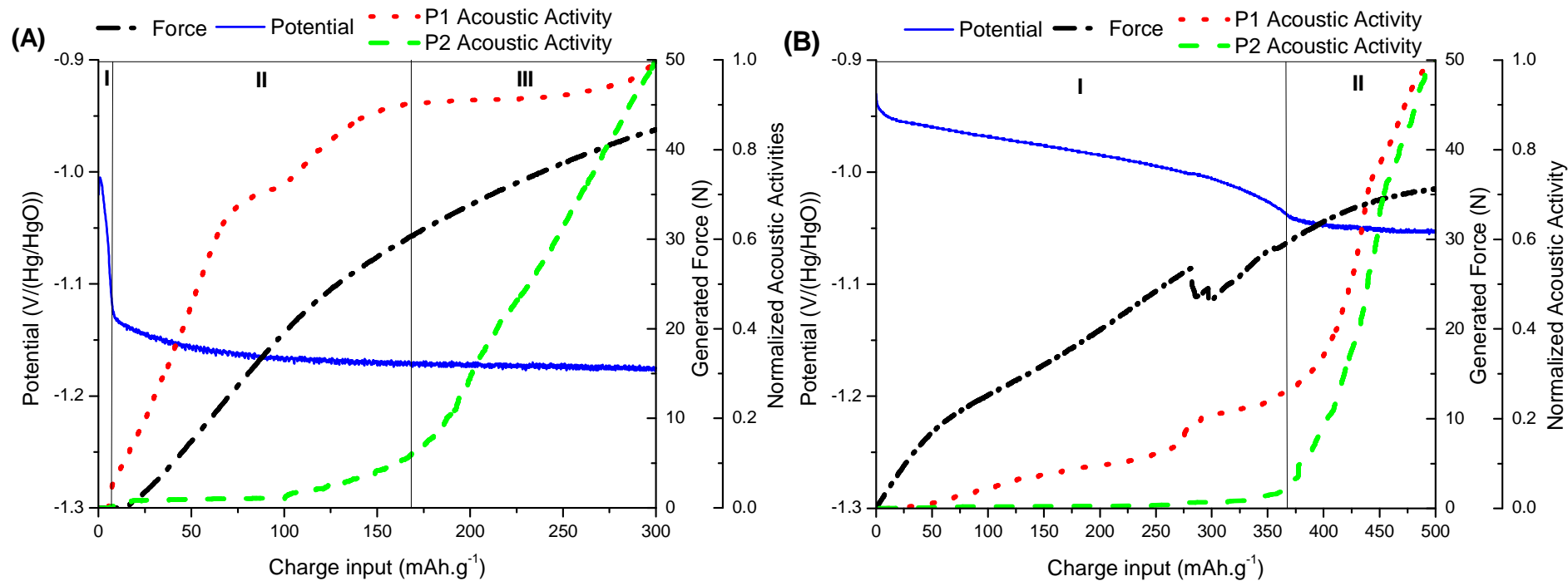


Fig. 3 – Evolution of the electrode potential, the normalized acoustic activity of P1 and P2 type AE signals, the generated force as function of the charge input on (A) LaNi₅- based and (B) MgNi electrodes during the first charge

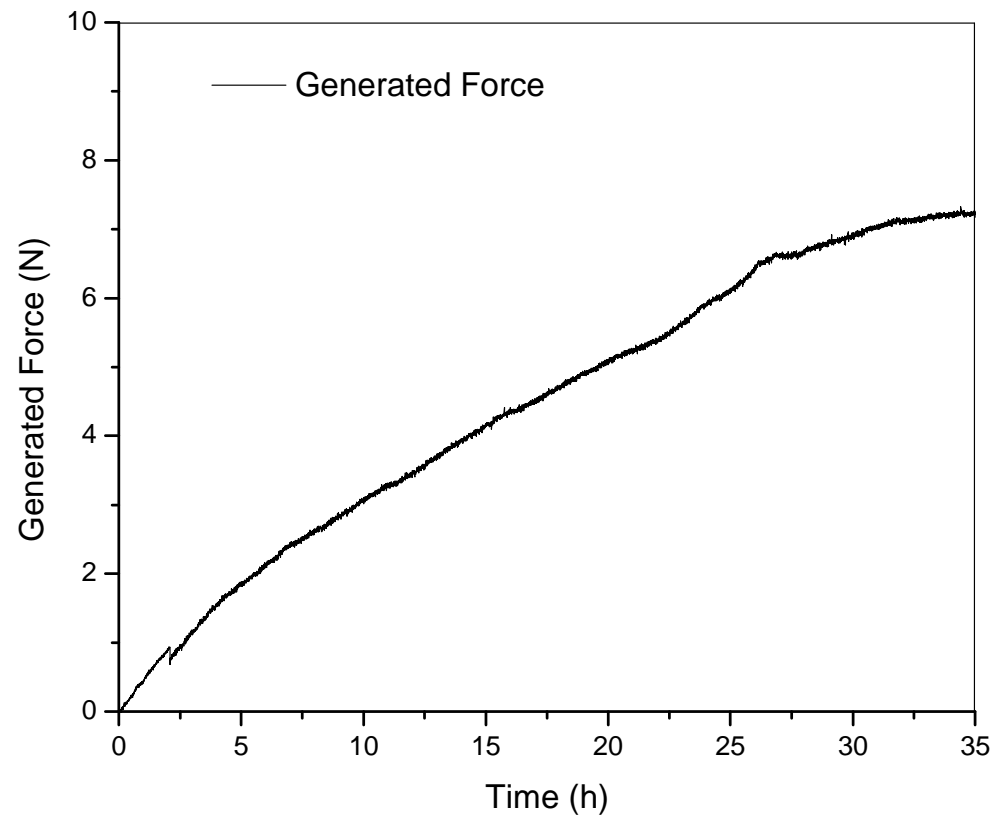


Fig. 4 Evolutions of the electrode potential and the generated force during an open potential circuit on MgNi electrode

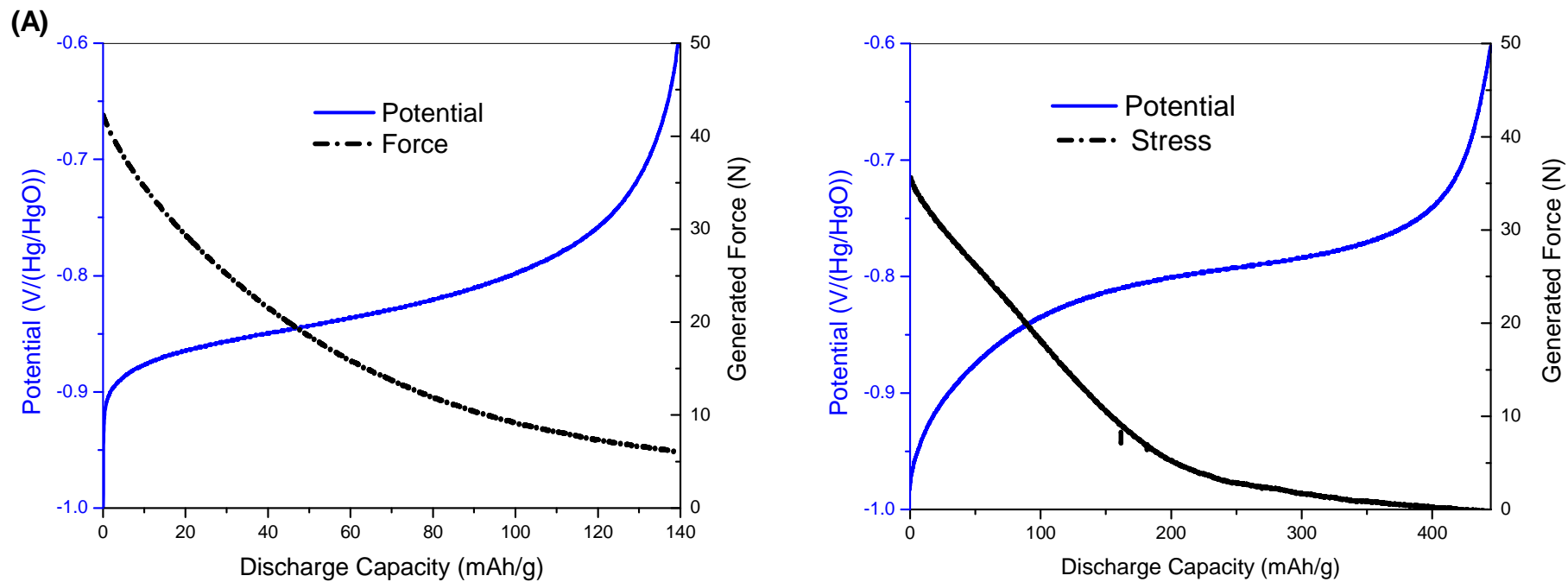


Fig. 5 – Evolution of the electrode potential and the generated as function of the discharge capacity on (A) LaNi₅- based and (B) MgNi electrodes during the first discharge

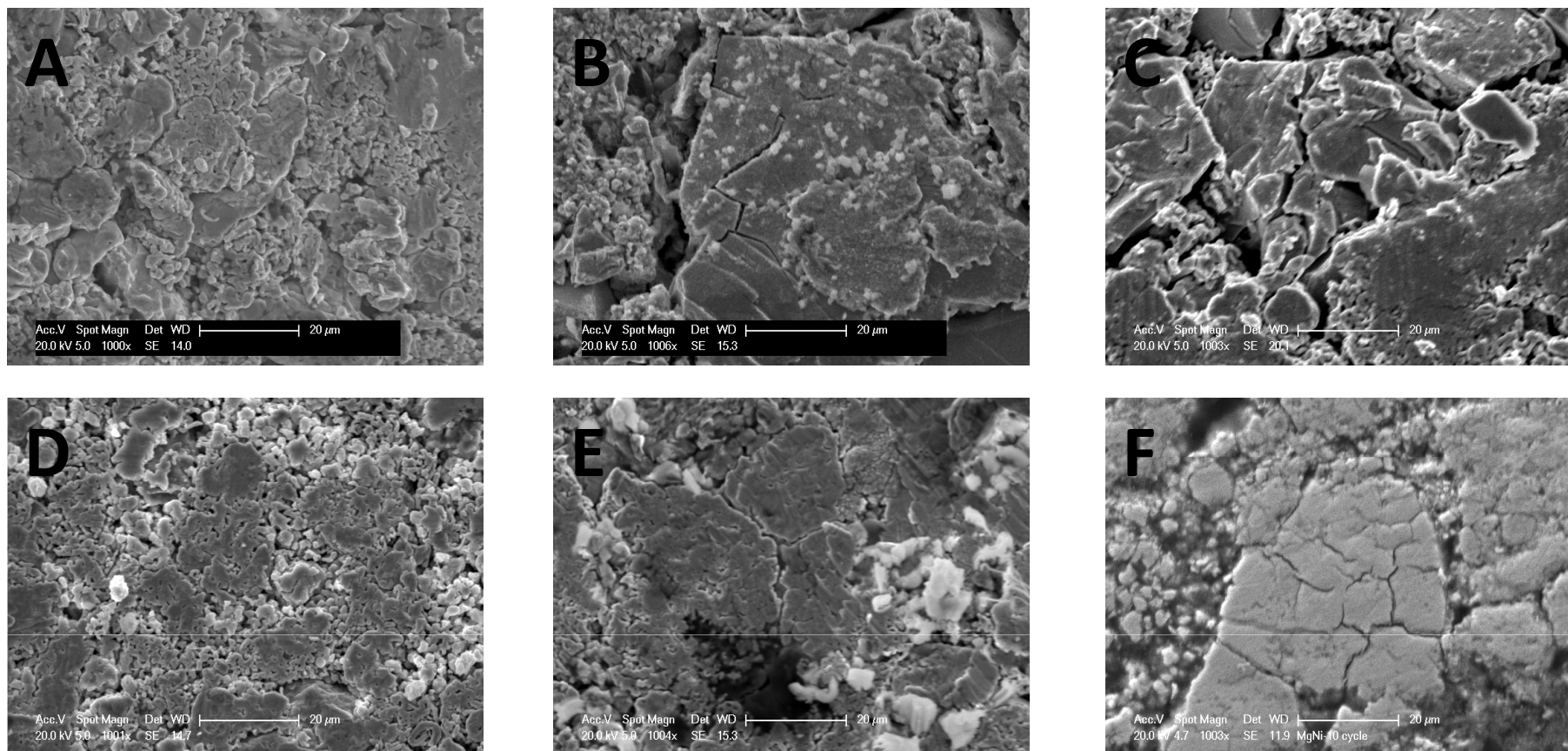


Fig. 6 - SEM micrographs of a LaNi₅-based electrode ,before charging (A), after 1 cycle (B), after 4 cycles (C) and of MgNi electrode, before charging (D), after 1 cycle (E) and after 10 cycles (F)

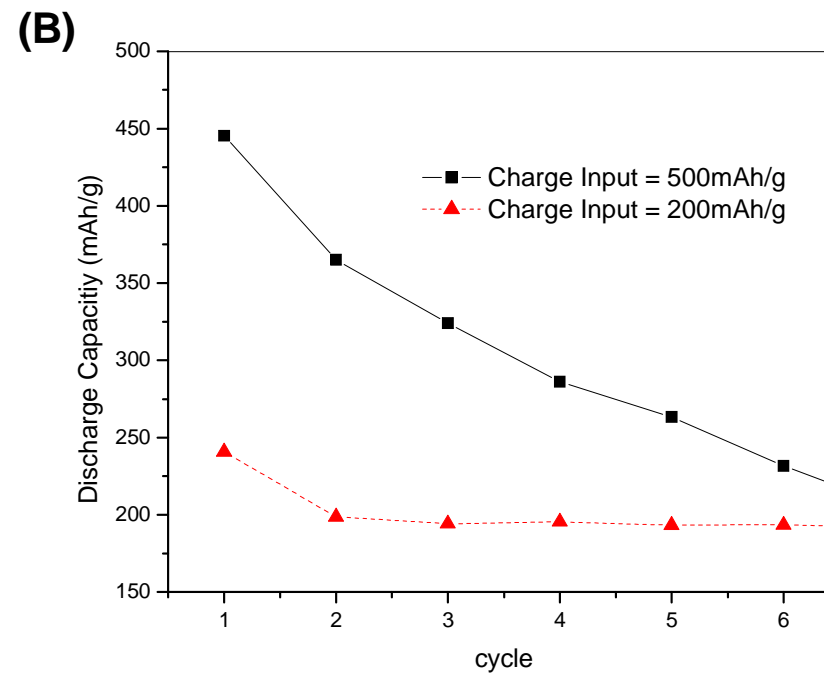
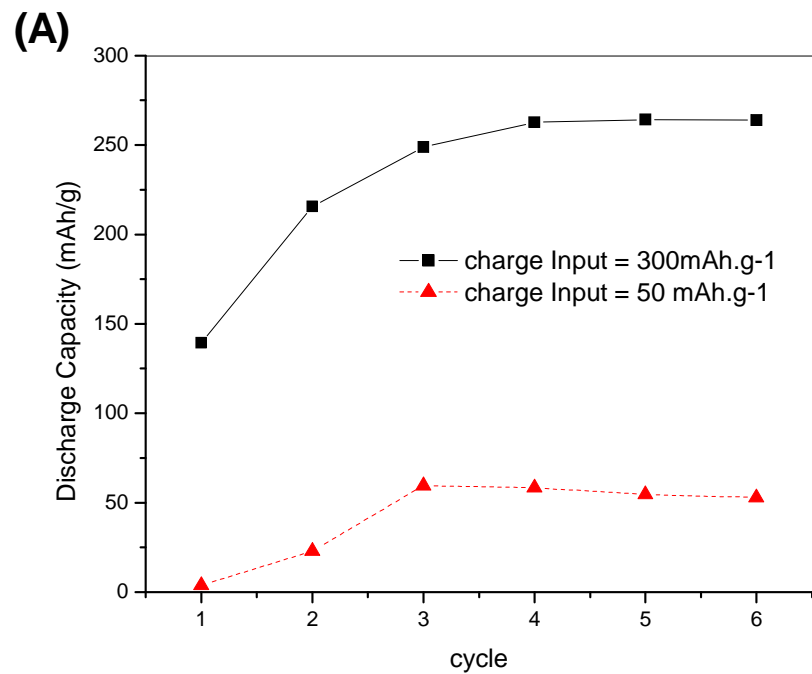


Fig. 7 – Evolution of the discharge capacity as function of the charge/discharge cycle number on (A) LaNi₅- based and (B) MgNi electrodes

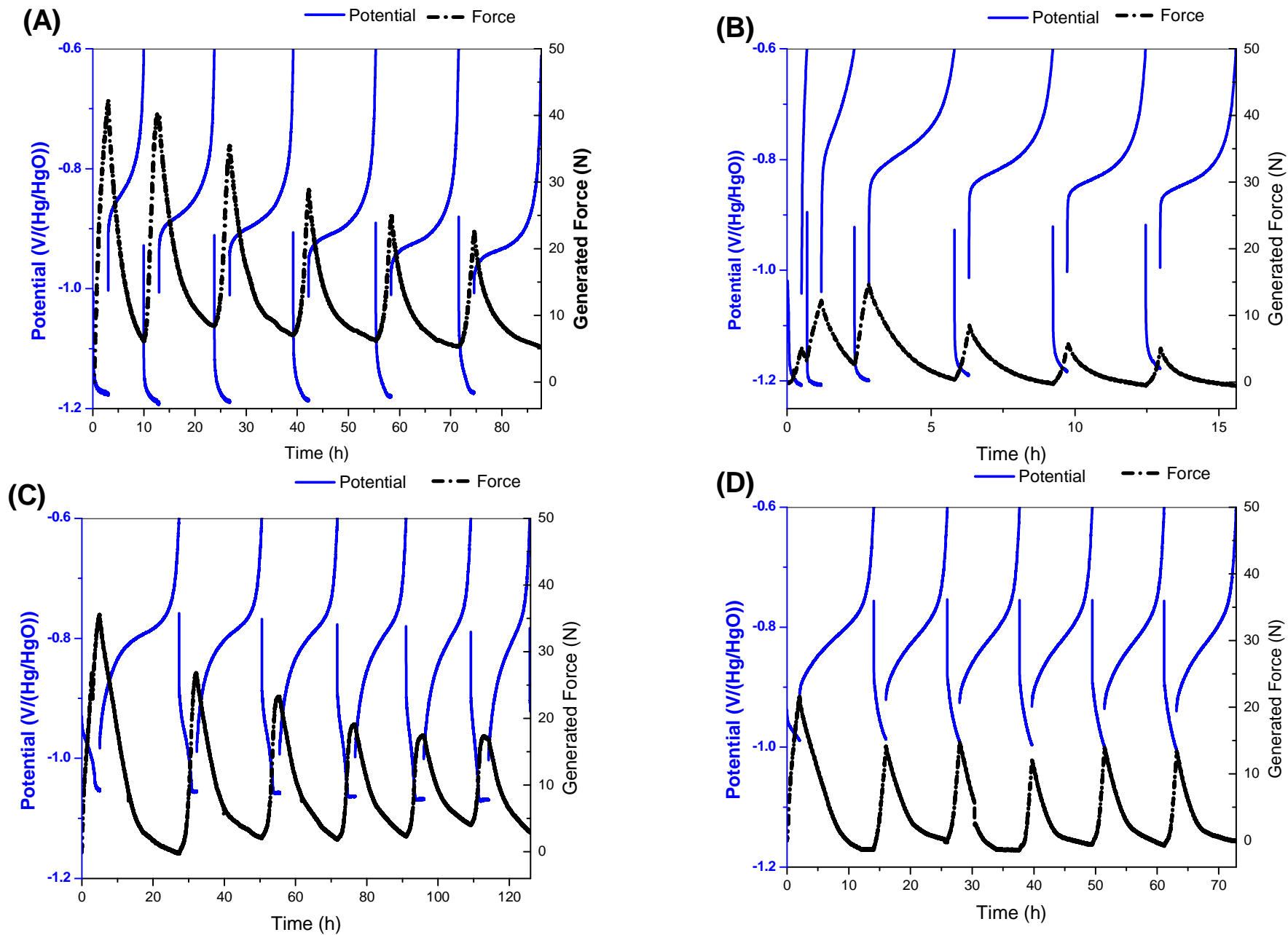


Fig. 8 – Evolution of the electrode potential and the generated stress as function of the test time on LaNi₅- based electrode for a charge input of (A) 300 and (B) 50 mAh.g⁻¹, and on MgNi electrode for a charge input of (C) 500 and (D) 200 mAh.g⁻¹ during the six first discharges

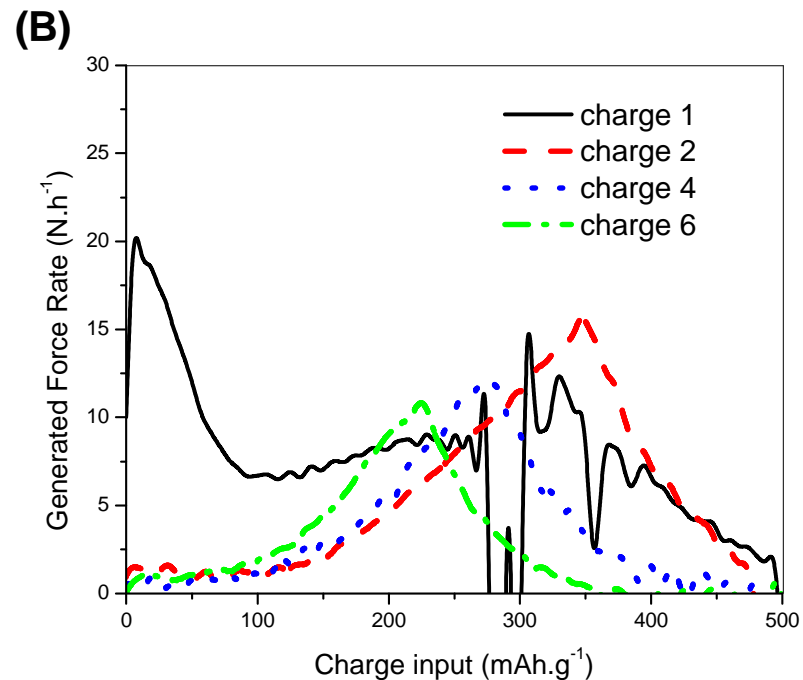
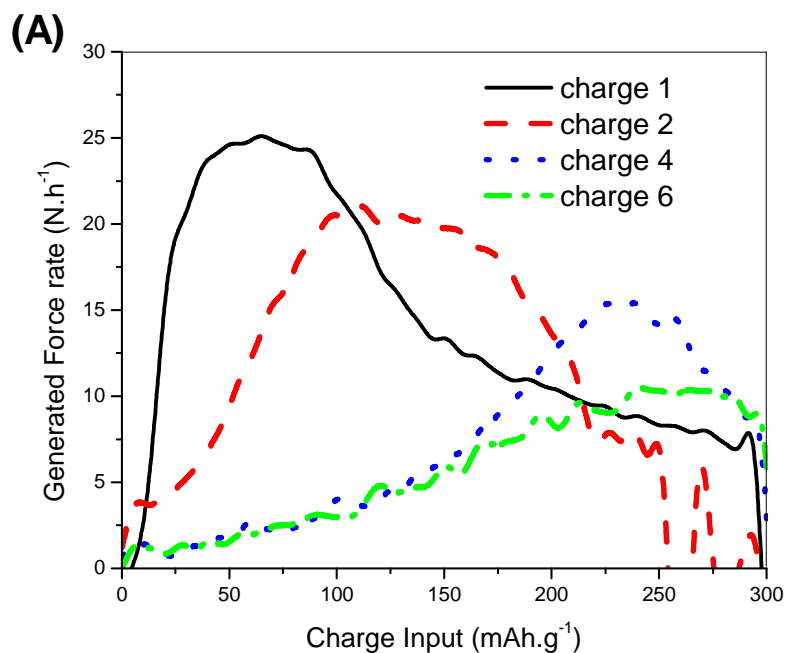


Fig. 9 – Evolution of the stress rate as function of the charge input on (A) LaNi_5 - based and (B) MgNi electrodes during the first, second, fourth and sixth first charges