Electronic Supporting Information

Cyanide-bridged NiCr and alternate NiFe/NiCr magnetic ultra thin films on functionalized Si(100) surface

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Fig. S1 Infrared spectra centered on the cyanide band of the precursor $K_3[Cr(CN)_6]$ (2129 cm^{-1}) and the bulk material $Ni_3[Cr(CN)_6]_2$ (2172 cm^{-1}).

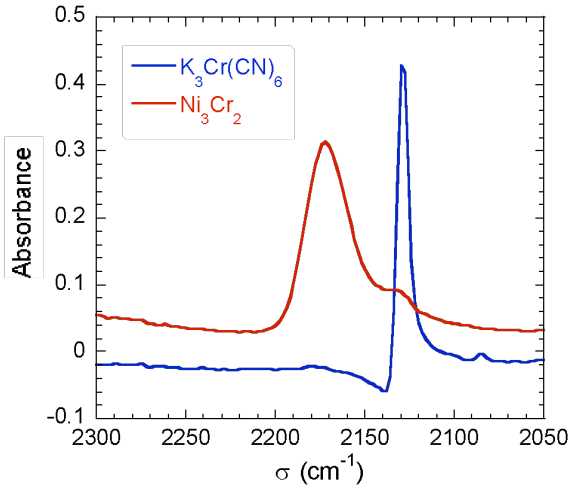
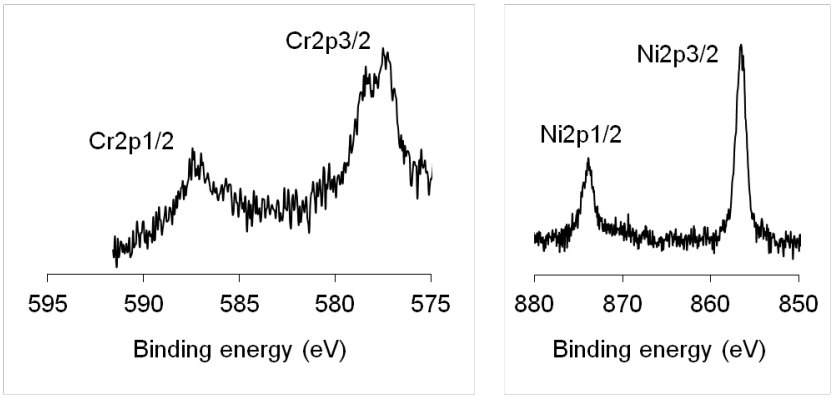
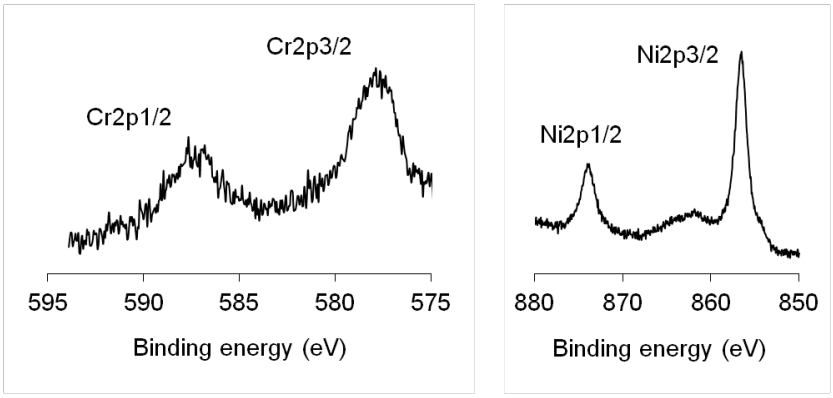


Fig. S2 XPS spectra at the Cr2p, Ni2p and Fe2p edges for a) the reference $Ni_3[Cr(CN)_6]_2$ bulk compound, b) at the step *Ni6* of NiCr SGS, c) at the step *Ni6* of NiCr on NiFe SGS (sample **G1**), d) at the step *Ni12* of alternated two cycles NiFe and two cycles NiCr growth (sample **G2**), e) at the step *Ni6* of alternated one cycle NiFe and one cycle NiCr growth (sample **G3**), f) table with the energy values.

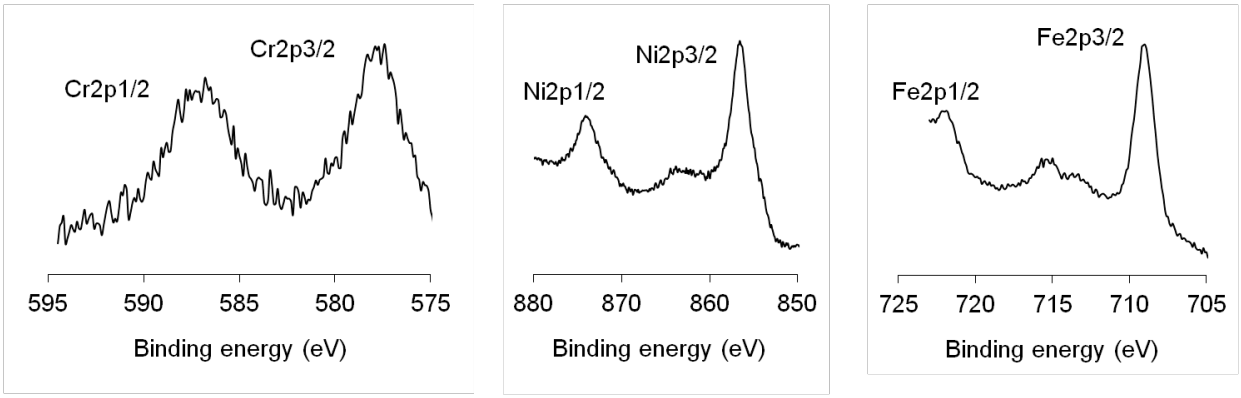
a)



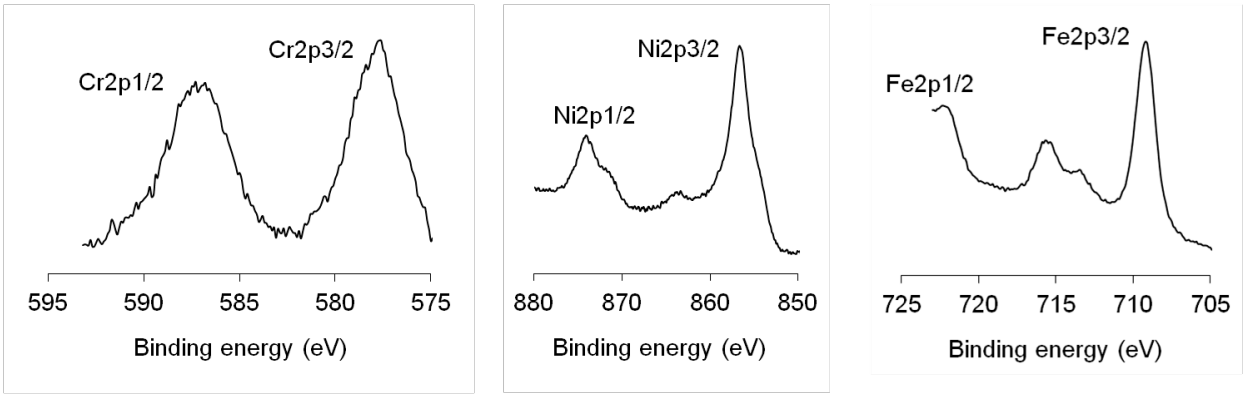
b)



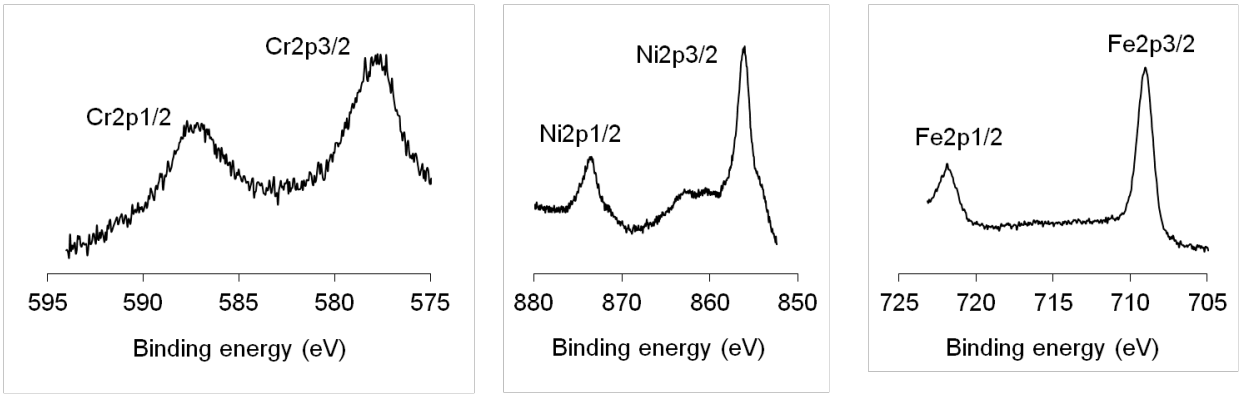
c)



d)



e)

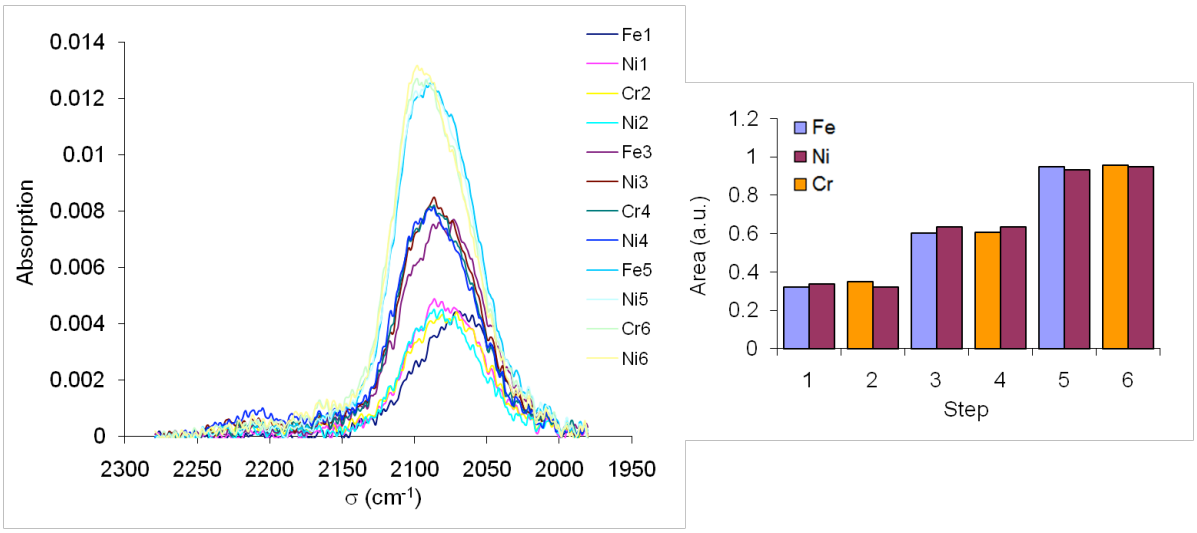


f)

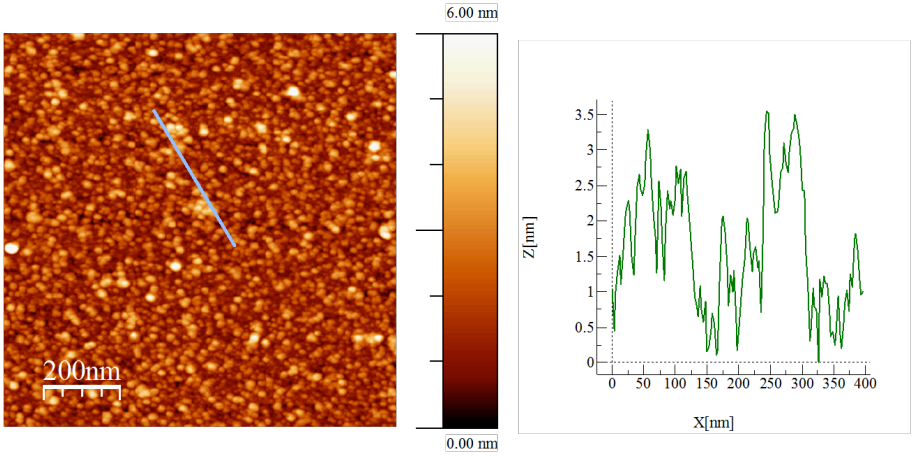
Energies (eV)	$Cr2p_{1/2}$	$Cr2p_{3/2}$	$Ni2p_{1/2}$	$Ni2p_{3/2}$	$Fe2p_{1/2}$	$Fe2p_{3/2}$
Bulk Ni_3Cr_2	587.3	577.9	873.6	856.5	-	-
Ni-Cr	587.3	577.8	873.8	856.4	-	-
Ni-Cr on Ni-Fe	587.4	578.0	873.8	856.2	721.5	708.7
Alternated two cycles	587.2	577.8	873.9	856.4	721.8	709.0
Alternated one cycle	587.2	577.9	874.0	856.3	721.7	708.9

Fig. S3 Alternated one cycle NiFe and one cycle NiCr growth (6 cycles) – sample **G3**: a) Evolution of the infra-red spectra centered on the cyanide band from the step *Ni1* to the step *Ni6* – IR spectra and peak area at each step. b) Atomic Force Microscopy image and cross section represented by the blue line on the image at the step *Ni6*. c) M = f(T) curves at H = 500 Oe at the step *Ni6* – plain circles: ZFC, open circles: FC.

a)



b)



c)