

Supplementary Material (ESI) for CrystEngComm

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Electronic Supplementary Information (ESI)

Controlled synthesis, phase formation, growth mechanism and magnetic properties of 3-D CoNi alloy microstructures composed of nanorods

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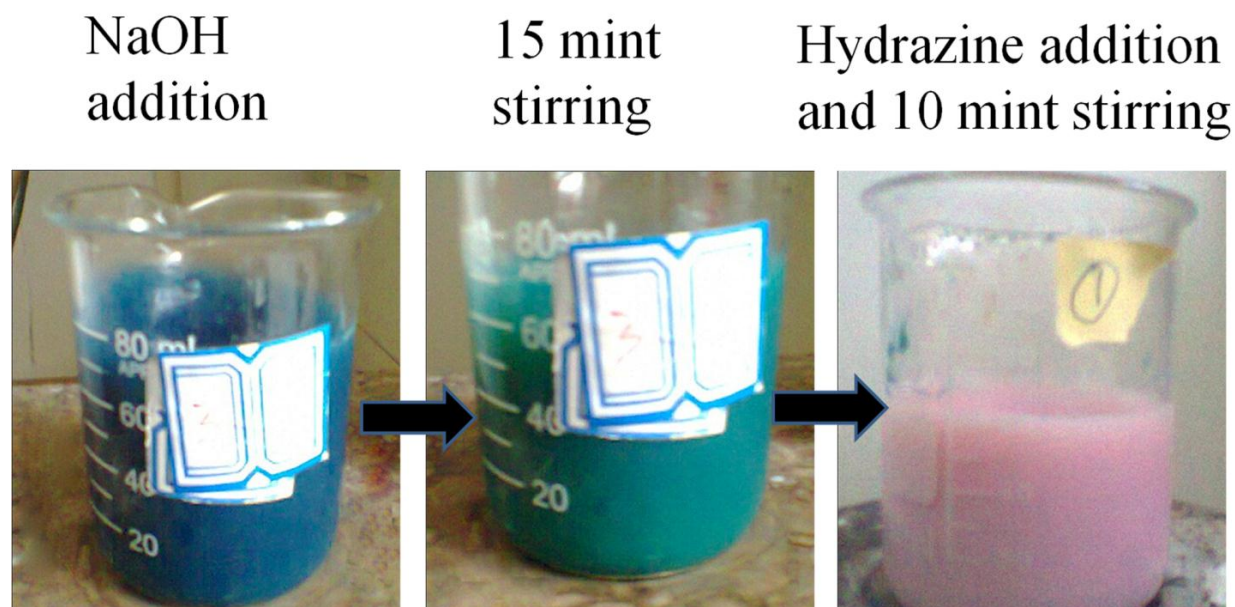


Figure S1. The solution of metal salts at different stages.

Table S1. Label and conditions of experiments

label	NaOH	Time	Temperature
	M	h	°C
3DF*	0.75	16	120
t14	0.75	14	120
t12	0.75	12	120
t8	0.75	8	120
t4	0.75	4	120
N1.00	1.00	16	120
N0.5	0.5	16	120
N0.25	0.25	16	120
N0.0	0.00	16	120
T150	0.75	7	150
T180	0.75	7	180
T200	0.75	7	200

T230 0.75 7 230

*3DF=3-D flower

Table S2. Measured and Calculated angles between different planes

Plane 1	Plane 2	Calculated angles	Measured angle	Δ
$(h_1 k_1 l_1)$	$(h_2 k_2 l_2)$	(Deg)	(Deg)	
(111)	(220)	35.26	35.3	0.04
(111)	$(11\bar{1})$	70.52	71.2	0.5
(111)	$(11\bar{3})$	100.02	100.0	0.02
(111)	$(00\bar{2})$	125.26	125.1	0.16
(111)	$(\bar{1}\bar{1}\bar{1})$	180	179.6	0.04
(111)	$(\bar{2}\bar{2}\bar{0})$	144.74	144.2	0.54
(111)	$(\bar{1}\bar{1}\bar{1})$	109.47	108.7	0.77
(111)	$(\bar{1}\bar{1}\bar{3})$	79.98	79.4	0.58
(111)	(002)	35.26	35.3	0.04
(220)	$(11\bar{1})$	35.26	35.8	0.54
(220)	$(11\bar{3})$	64.76	65.1	0.44
(220)	$(00\bar{2})$	90	90.1	0.10
(220)	$(\bar{1}\bar{1}\bar{1})$	144.74	144.4	0.34
(220)	$(\bar{2}\bar{2}\bar{0})$	180	179.6	0.40
(220)	$(\bar{1}\bar{1}\bar{1})$	144.74	144.0	0.74
(220)	$(\bar{1}\bar{1}\bar{3})$	115.23	114.1	1.13
(220)	(002)	90.0	90.1	0.10

(11 $\bar{1}$)	(1 $\bar{1}$ 3)	29.5	30.0	0.50
(11 $\bar{1}$)	(00 $\bar{2}$)	54.74	54.4	0.30
(11 $\bar{1}$)	($\bar{1}\bar{1}\bar{1}$)	109.47	109.2	0.27
(11 $\bar{1}$)	($\bar{2}\bar{2}\bar{0}$)	144.74	144.3	0.44
(11 $\bar{1}$)	($\bar{1}\bar{1}\bar{1}$)	180.0	179.3	0.7
(11 $\bar{1}$)	($\bar{1}\bar{1}$ 3)	150.5	151.0	0.50
(11 $\bar{1}$)	(00 $\bar{2}$)	125.26	125.7	0.44
(11 $\bar{3}$)	(00 $\bar{2}$)	25.24	25.7	0.46
(11 $\bar{3}$)	($\bar{1}\bar{1}\bar{1}$)	79.98	79.7	0.28
(11 $\bar{3}$)	($\bar{2}\bar{2}\bar{0}$)	115.24	115.0	0.24
(11 $\bar{3}$)	($\bar{1}\bar{1}\bar{1}$)	150.5	151.0	0.50
(11 $\bar{3}$)	($\bar{1}\bar{1}$ 3)	180.0	179.4	0.6
(11 $\bar{3}$)	(00 $\bar{2}$)	154.76	154.0	0.76
(00 $\bar{2}$)	($\bar{1}\bar{1}\bar{1}$)	54.74	54.4	0.34
(00 $\bar{2}$)	($\bar{2}\bar{2}\bar{0}$)	90	90.5	0.5
(00 $\bar{2}$)	($\bar{1}\bar{1}\bar{1}$)	125.26	125.2	0.06
(00 $\bar{2}$)	($\bar{1}\bar{1}$ 3)	154.76	154.9	0.14
(00 $\bar{2}$)	(00 $\bar{2}$)	180.0	180.1	0.1
($\bar{1}\bar{1}\bar{1}$)	($\bar{2}\bar{2}\bar{0}$)	35.26	35.1	0.16
($\bar{1}\bar{1}\bar{1}$)	($\bar{1}\bar{1}\bar{1}$)	70.53	70.8	0.27
($\bar{1}\bar{1}\bar{1}$)	($\bar{1}\bar{1}$ 3)	100	99.6	0.4
($\bar{1}\bar{1}\bar{1}$)	(00 $\bar{2}$)	125.26	124.8	0.46

($\bar{2}\bar{2}0$)	($\bar{1}\bar{1}1$)	35.26	35.8	0.54
($\bar{2}\bar{2}0$)	($\bar{1}\bar{1}3$)	64.76	65.3	0.54
($\bar{2}\bar{2}0$)	(002)	90	89.1	0.90
($\bar{1}\bar{1}1$)	($\bar{1}\bar{1}3$)	29.49	29.2	0.29
($\bar{1}\bar{1}1$)	(002)	54.74	54.2	0.54
($\bar{1}\bar{1}3$)	(002)	25.24	24.3	0.96

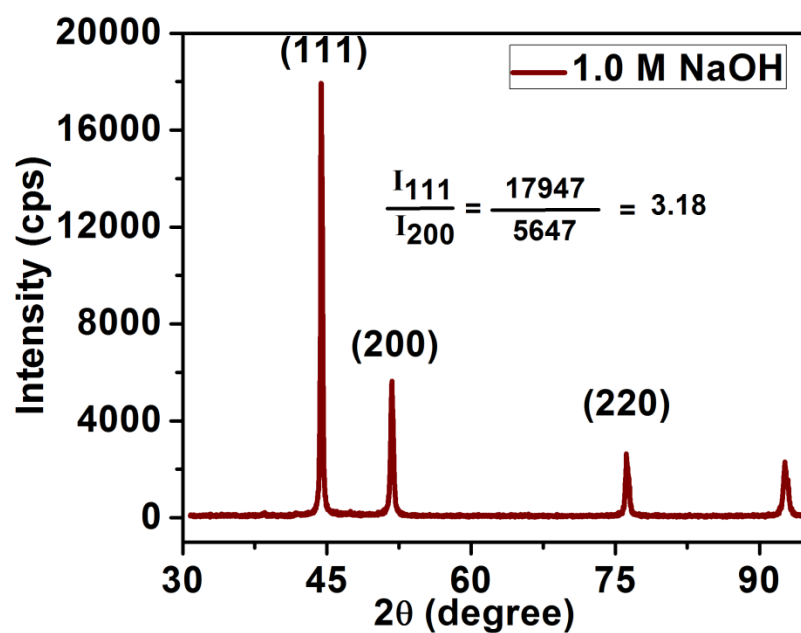


Figure S2. XRD pattern of sample prepared at 1.0 M NaOH addition. The intensity ratio I_{111}/I_{200} is found to be 3.18.