Supplementary Materials: Selectivity Dependence of 1,1-Difluoro-1-Chloroethane Dehydrohalogenation on the Metal–Support Interaction over SrF_2 Catalyst

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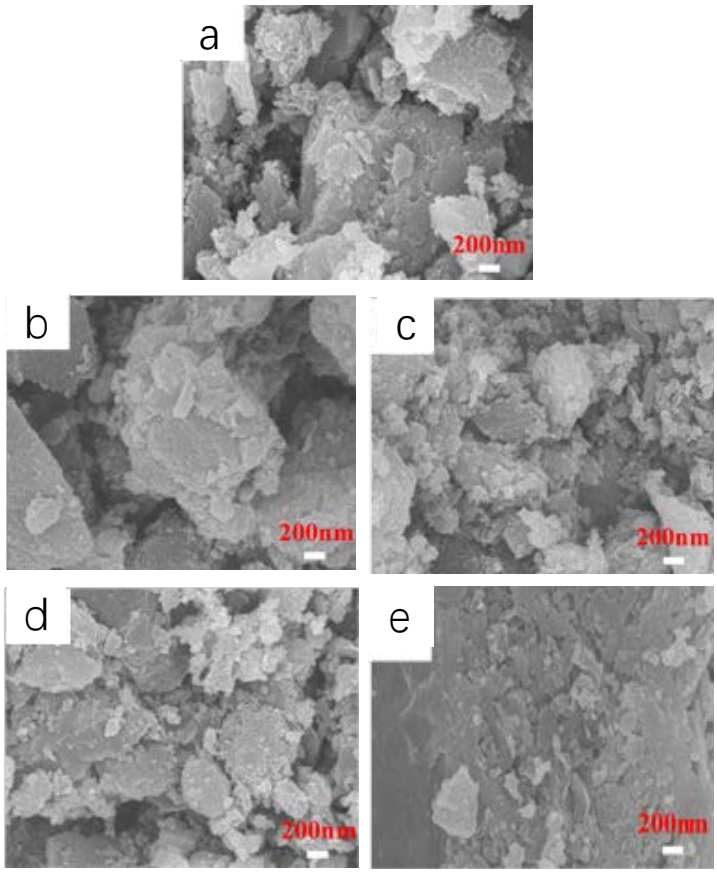

Figure S1. SEM images of SrF_2@C catalysts calcined at different temperatures. (a) SrF_2@C (390), (b) SrF_2@C-500, (c) SrF_2@C-600, (a) SrF_2@C-700, (e) SrF_2@C-800.

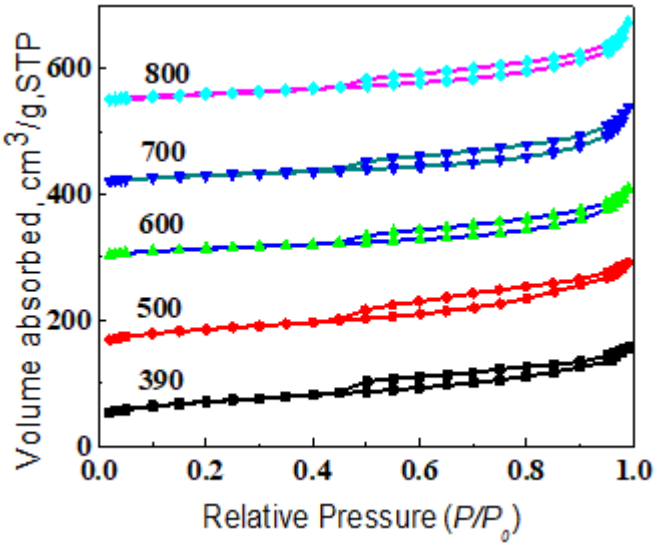

Figure S2. N_2 adsorption-desorption isotherms of SrF_2@C.

Table S1. Surface area and porous parameters of SrF_2@C samples.

Samples	Specific surface area (m^2/g)	Total pore volume (cm^3/g)	Micropore volume (cm^3/g)	Mesopore volume (cm^3/g)
SrF_2@C-390	257	0.24	0.06	0.18
SrF_2@C-500	250	0.27	0.07	0.20
SrF_2@C-600	161	0.21	0.04	0.17
SrF_2@C-700	156	0.23	0.06	0.17
SrF_2@C-800	170	0.25	0.04	0.21

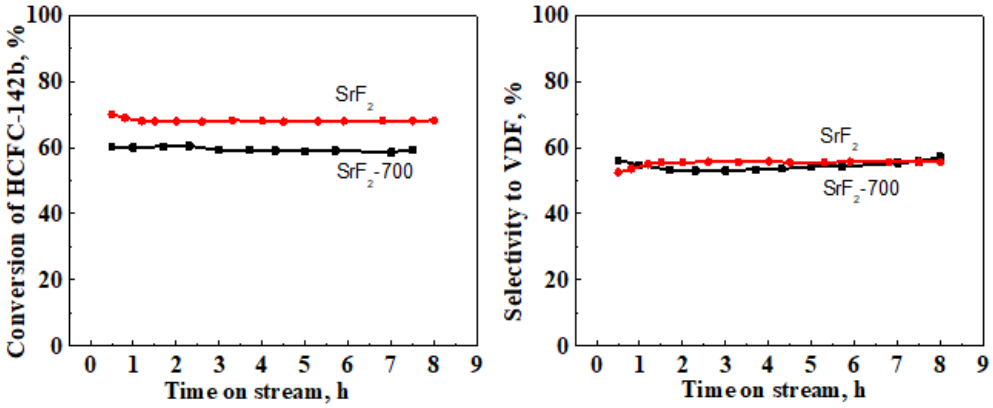

Figure S3. Catalytic performance of SrF_2 prepared by precipitation and calcined at 700 °C for the decomposition of HCFC-142b. Reactions were

carried out at 350 °C, 1 bar, GHSV (HCFC-142b) of 600 h^{-1} with N_2:HCFC-142b of 1:1.

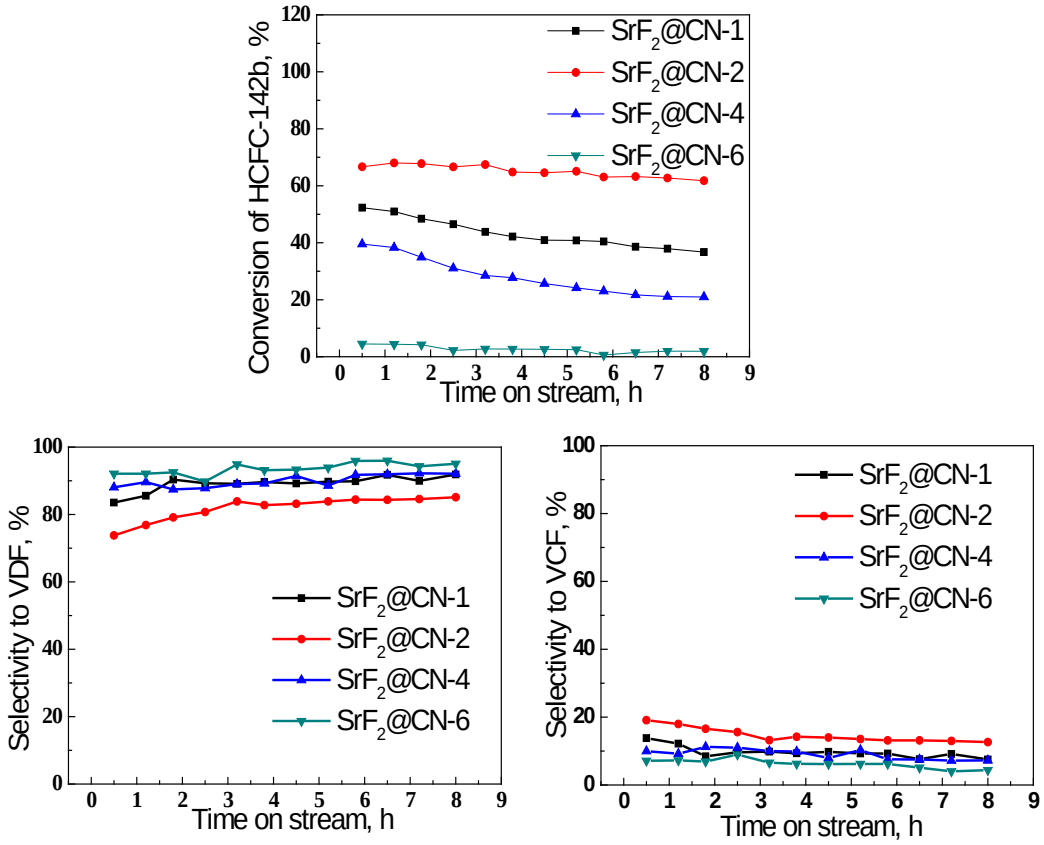

Figure S4. Catalytic performance of SrF_2@CN with different doping amount of urea for the decomposition of HCFC-142b. Reactions were carried out at 350 °C, 1 bar, GHSV (HCFC-142b) of 600 h^{-1} with N_2:HCFC-142b of 1:1. SrF_2@CN-1 with mass ratio of SrC_2O_4:PVDF:Urea=1:1:1, SrF_2@CN-2 of 1:1:2, SrF_2@CN-4 of 1:1:4, and SrF_2@CN-6 of 1:1:6.

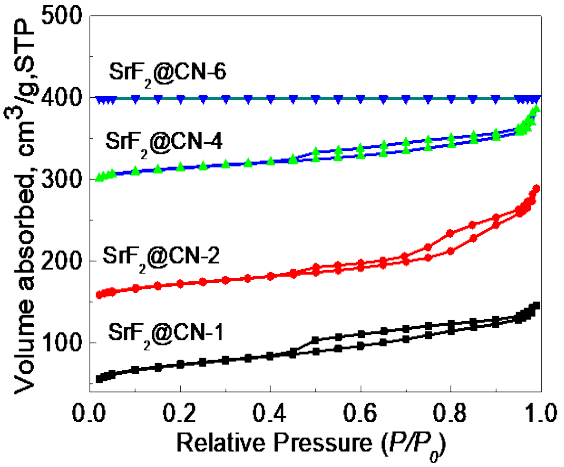

Figure S5. N_2 adsorption-desorption isotherms of SrF_2@NC with different doping amount of urea during catalyst preparation. SrF_2@CN-1 with mass ratio of SrC_2O_4:PVDF:Urea=1:1:1, SrF_2@CN-2 of 1:1:2, SrF_2@CN-4 of 1:1:4, and SrF_2@CN-6 of 1:1:6.

Table S2. Surface area and porous system parameters of SrF_2@NC catalyst prepared with different doping amount of urea.

Samples	Specific surface area (m^2/g)	Total pore volume (cm^3/g)	Micropore volume (cm^3/g)	Mesopore volume (cm^3/g)
SrF_2@CN-1	267	0.23	0.08	0.15
SrF_2@CN-2	325	0.31	0.1	0.21
SrF_2@CN-4	190	0.19	0.06	0.13
SrF_2@CN-6	1.2	0.02	--	0.02

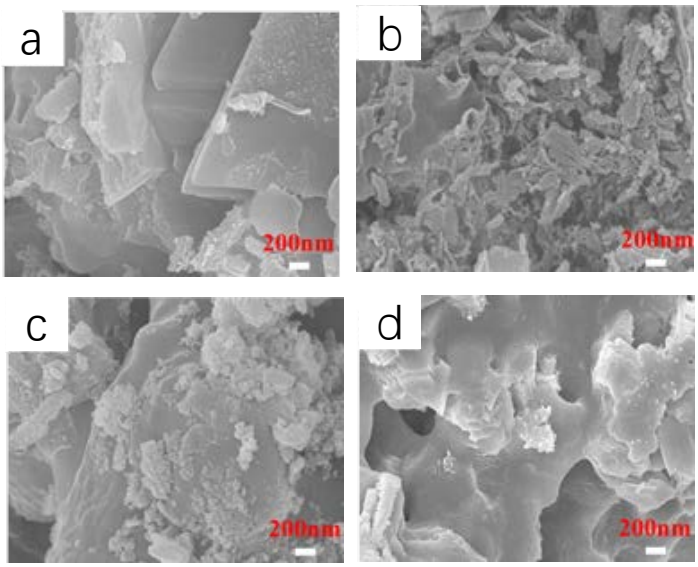

Figure S6. SEM images of SrF_2@NC catalysts prepared by doping different amounts of urea during catalyst preparation. SrC_2O_4:PVDF:Urea of (a) 1:1:1; (b) 1:1:2; (b) 1:1:4 and (d) 1:1:6 .

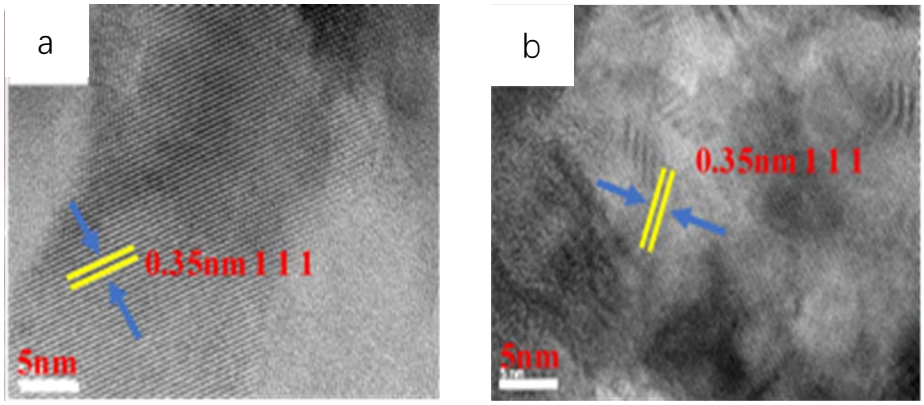

Figure S7. High resolution TEM images of SrF_2@C and SrF_2@NC-700 catalysts.

Table S3. Surface area and porous parameters of SrF_2@C, SrF_2@NC, SrF_2@C-700 and SrF_2@NC-700.

Samples	Specific surface area (m^2/g)	Total pore volume (cm^3/g)	Micropore volume (cm^3/g)	Mesopore volume (cm^3/g)
SrF_2@C	257	0.24	0.06	0.18
SrF_2@NC	325	0.31	0.1	0.21
SrF_2@C-700	156	0.23	0.06	0.17
SrF_2@NC-700	97	0.16	0.03	0.13

Table S4. Surface element content of SrF_2@C, SrF_2@NC, SrF_2@C-700 and SrF_2@NC-700 catalysts determined by XPS.

Catalysts	C	N	O	F	Sr
SrF_2@C-390	63	0	9	22	5
SrF_2@CN-390	63	6	4	20	7
SrF_2@C-700	67	2	5	18	7
SrF_2@NC-700	69	7	6	12	5