Supporting Information

Table SI1: Fit parameter for the Carbon 1s and Nitrogen 1s Spectra used in CasaXPS

	Name	Position [eV]	Pos Constr.	FWHM Constr. [eV]
Α	CH, CC	285.0	±0.1 eV	1.4 , 1.6
В	C-O-C/C-N	286.1	A + 1.1 eV	A * 1
С	C=O, N-C=O	287.4	A + 2.4 eV	A * 1
D	COOR/Urea	289.2	A + 4.1 eV	A * 1
Е	CO3	290.5	A + 5.5 eV	A * 1
F	Urea/Amine	400.0	±0.1 eV	1.3 , 1.5
G	Ammonium	401.0	F+1.0 eV	F*1
Н	Pyrrol-like N	398.6	F-1.33 eV	F*1



FigureSI 1: Example Fit of DK1 showing the components used to fit the N1s (left pane) and C 1s (right pane) detail spectra of the MMVF under investigation.



FigureSI 2: Quantification Results of the C1s-Detail Spectra in atom-% based on the fits shown in Figure SI1. COOR/Urea and CO3 are scaled by a factor of 10 for better visibility.



FigureSI 3: Quantification Results of the N 1s-Detail Spectra in atom-% based on the fits shown in Figure SI 1.



FigureSI 4: Elemental Ratios (at-%/at-%) as measured by XPS for each individual measurement position on all samples of the overlayer-Elements Carbon and Nitrogen to the sum of the Substrate Elements (Si, Ca,Al, S, Mg, K, Fe) Right: Correlation of the overlayer thickness and the C/Substrate ratio.