Supporting information

Aldehyde-conjugated chitosan-graphene oxide glucodynamers: ternary cooperative assembly and controlled chemical release

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Table S1: Contact Angle, thermal analysis and mechanical properties of films

Figure S1: DRIFT analysis of films **GO, CS-*f*, CS-GO-*f*** and **CS-Ar$_x$-*f***

Figure S2: DRUV-visible analysis of films **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

Figure S3: XRD analysis of films **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

Figure S4: Scanning electronic microscopy analyses, contact angle measurement and Transmission electronic microscopy analyses of **CS-Ar$_x$-*f***

Figure S5: EDX analysis of films **CS-Ar$_x$-GO-*f***

Figure S6: Thermal behavior of **CS-Ar$_x$-*f***.by TGA and DSC.

Figure S7: Stress–strain curves of **CS-f**, **CS-Ar$_x$-*f***, **CS-GO-*f*** and **CS-Ar$_x$-GO-*f*.**

Figure S8: Temperature-dependence aldehyde release from **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

Figure S9: pH-dependence aldehyde release from **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

Figure S10: Mechanism of the imine hydrolysis by water.

Table S1: Contact Angle, thermal analysis and mechanical properties of films

			DSC analysis		Mechanical properties	
Sample	**Contact angle value**	**Char residue (700°C)**	**T max (°C)**	**ΔH (J/g)**	**Young modulus (MPa)**	**Stress (MPa)**
CS-*f*	112.6° ± 1.66	21%	94	21.44	1488.80 ± 3.92	30 ± 2.3
CS-Ar$_1$-*f*	100.2° ± 1.99	33%	114	73.67	1902.90 ± 3.81	74 ± 1.8
CS-Ar$_2$-*f*	98.3° ± 1.41	32%	94	58.67	1857.83 ± 5.46	77 ± 2.5
CS-Ar$_3$-*f*	94.6° ± 3.30	29%	92	30.51	1746.42 ± 6.63	55 ± 1.4
CS-Ar4-*f*	85° ± 1.38	30%	115	47.43	1624.12 ± 5.57	40 ± 2.9
CS-GO-*f*	100.9° ± 2.20	30%	97	27.45	1684.45 ± 4.09	44 ± 3.2
CS-Ar$_1$-GO-*f*	87.1° ± 2.22	24%	119	120.44	2286.57 ± 2.19	78 ± 2.5
CS-Ar$_2$-GO-*f*	85.3° ± 1.85	32%	108	63.82	2164.45 ± 2.03	78 ± 2.2
CS-Ar$_3$-GO-*f*	82.5° ± 1.91	33%	95	51.48	1794.09 ± 2.57	72 ± 1.5
CS-Ar$_4$-GO-*f*	66.1° ± 3.07	31%	117	65.58	1660.18 ± 5.02	43 ± 2.4

Figure S1: DRIFT analysis of films **GO, CS-*f*, CS-GO-*f*** and **CS-Ar$_x$-*f***

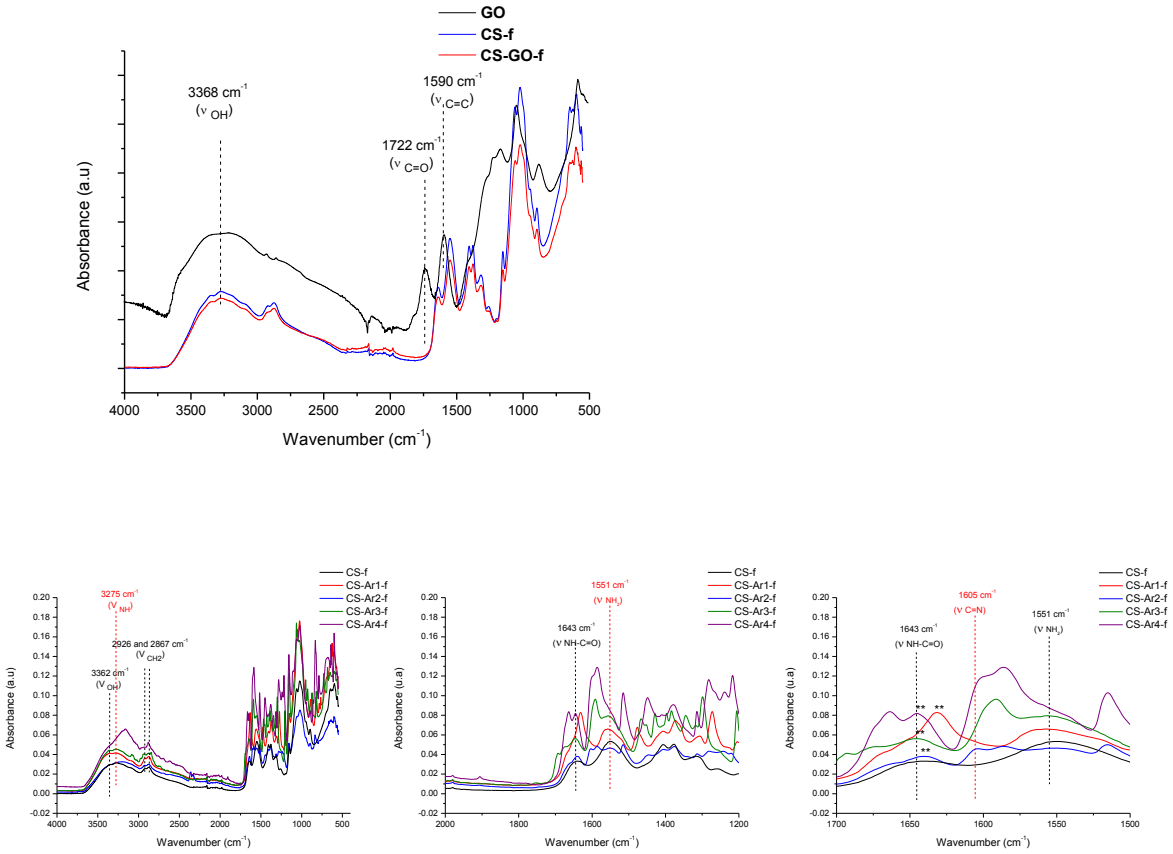


Figure S2: DRUV-visible analysis of films **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

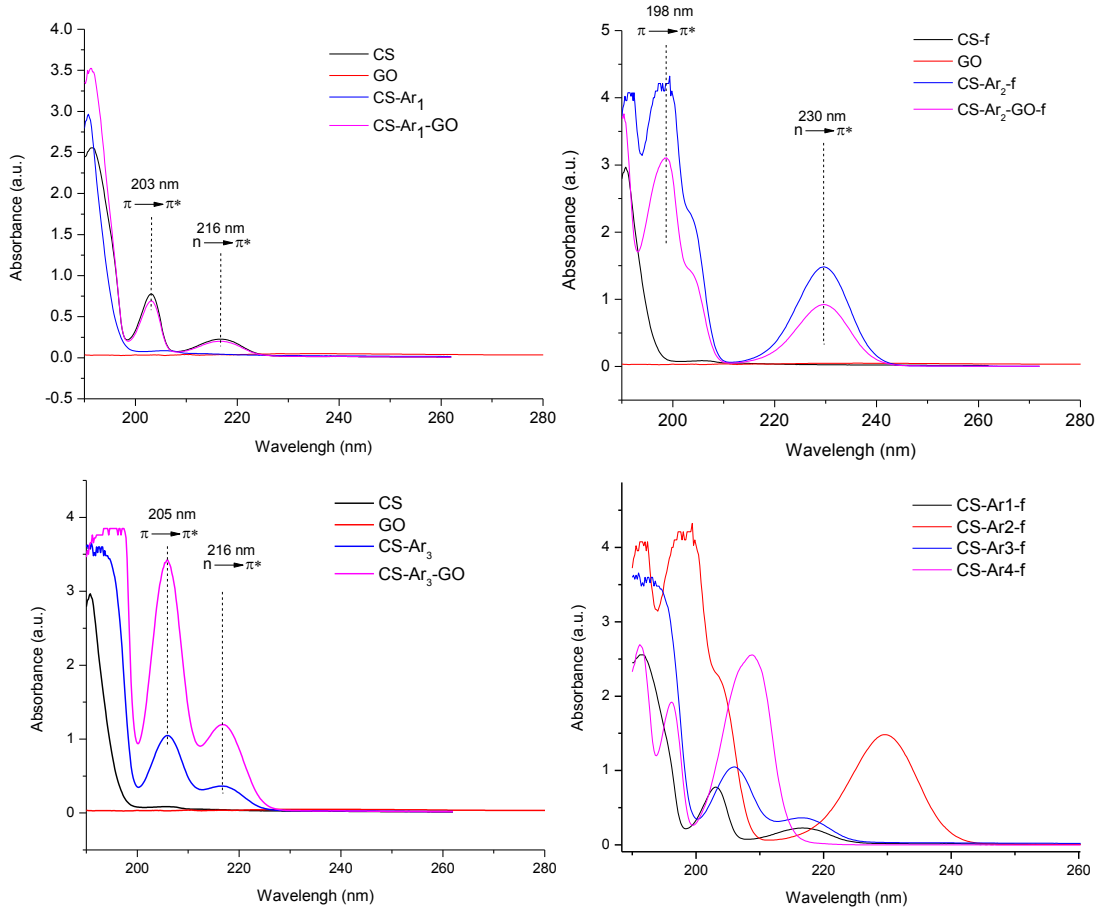


Figure S3: XRD analysis of films

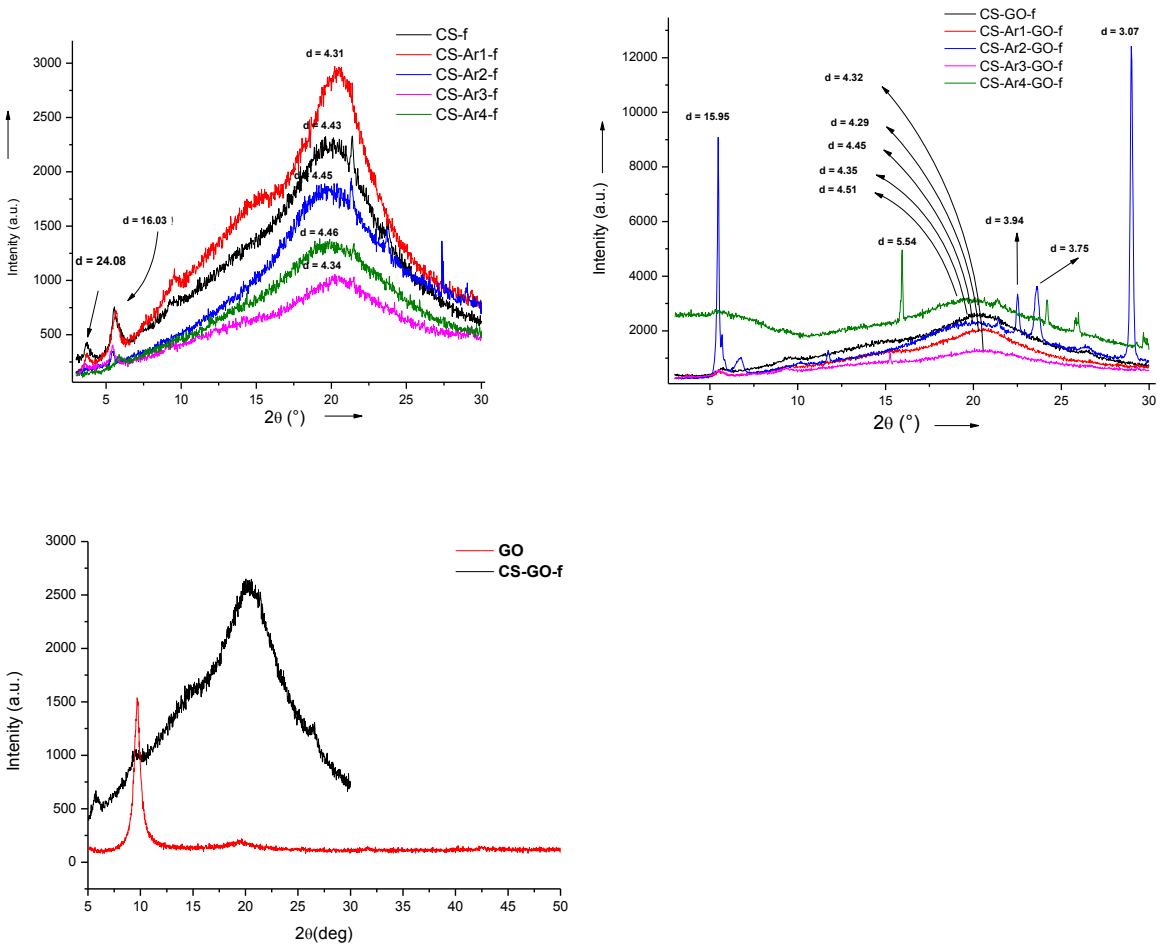
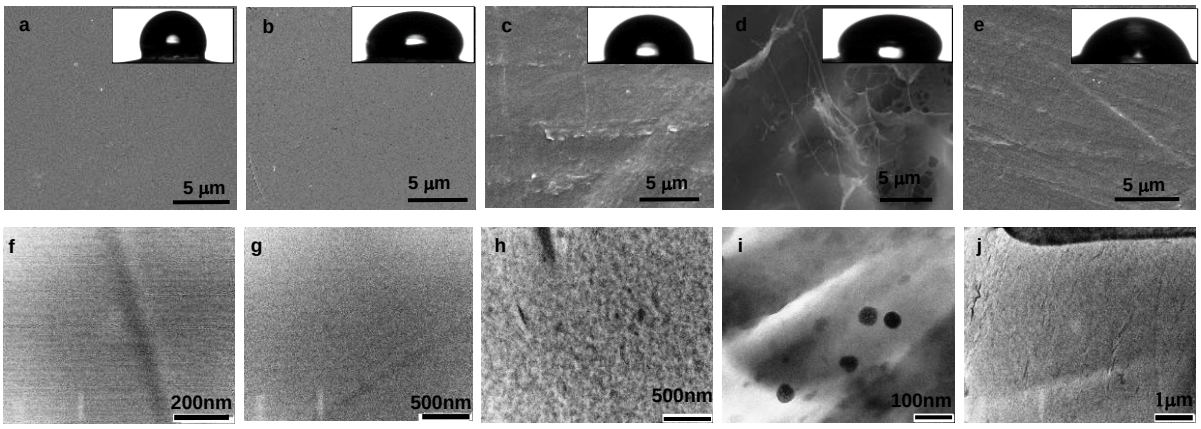


Figure S4: Scanning electronic microscopy analyses, contact angle measurement and Transmission electronic microscopy analyses of **CS-Ar$_x$-*f***



a-e Scanning electronic microscopy analyses and contact angle measurement (onset) of : a) **CS-*f*** ; b) **CS-Ar$_1$-*f***; c) **CS-Ar$_2$-*f***; d) **CS-Ar$_3$-*f***; e) **CS-Ar$_4$-*f*. f-j** Transmission electronic microscopy analyses of. f) **CS-*f***; g) **CS-Ar$_1$-*f***; h) **CS-Ar$_2$-*f***; i) **CS-Ar$_3$-*f***; j) **CS-Ar$_4$-*f***

Figure S5: EDX analysis of films

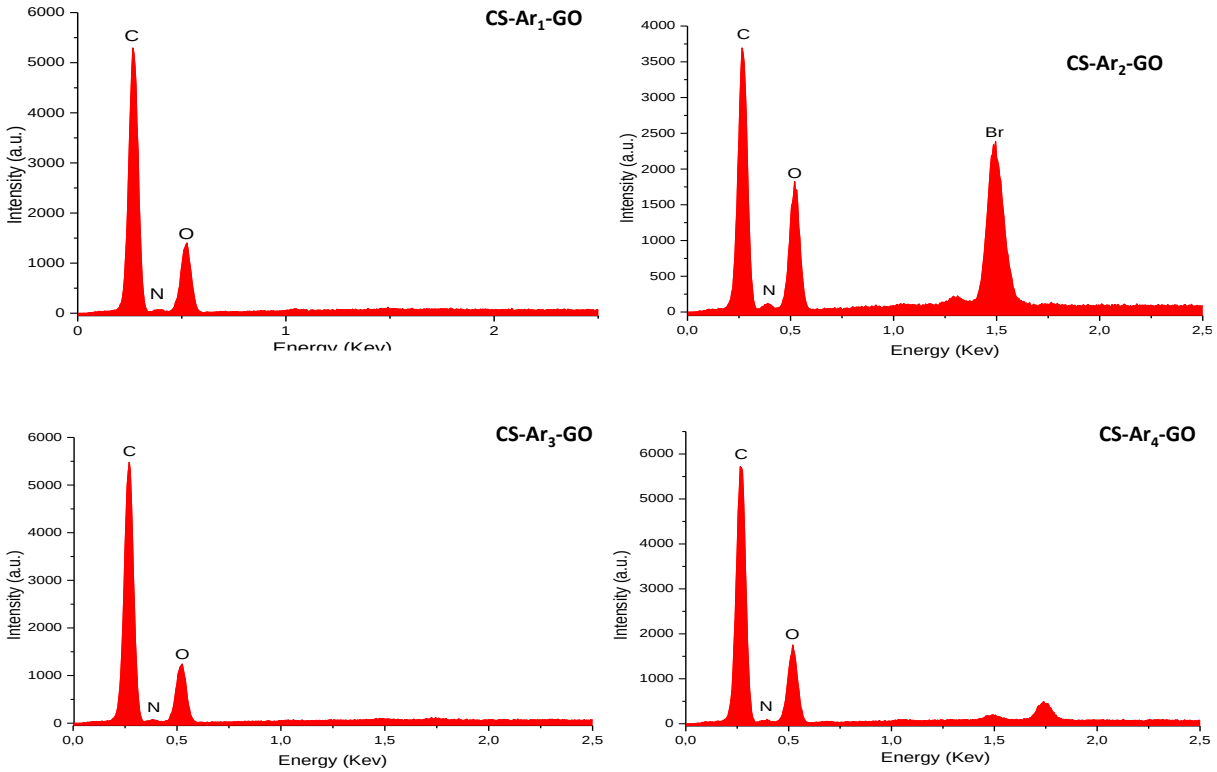


Figure S6: Thermal behavior of **CS-Ar$_x$-*f***.by TGA and DSC

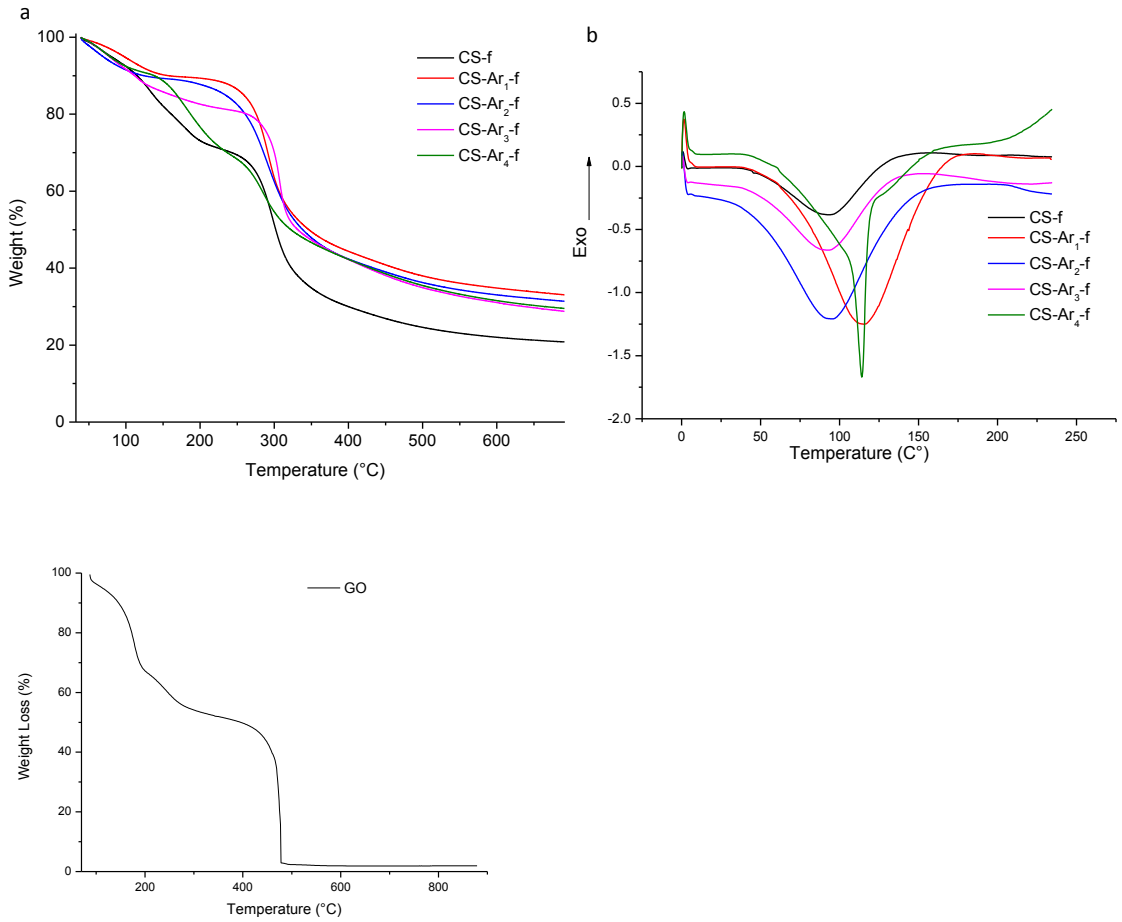


Figure S7: Stress–strain curves of **CS-f**, **CS-Ar$_x$-*f***, **CS-GO-*f*** and **CS-Ar$_x$-GO-*f*.**

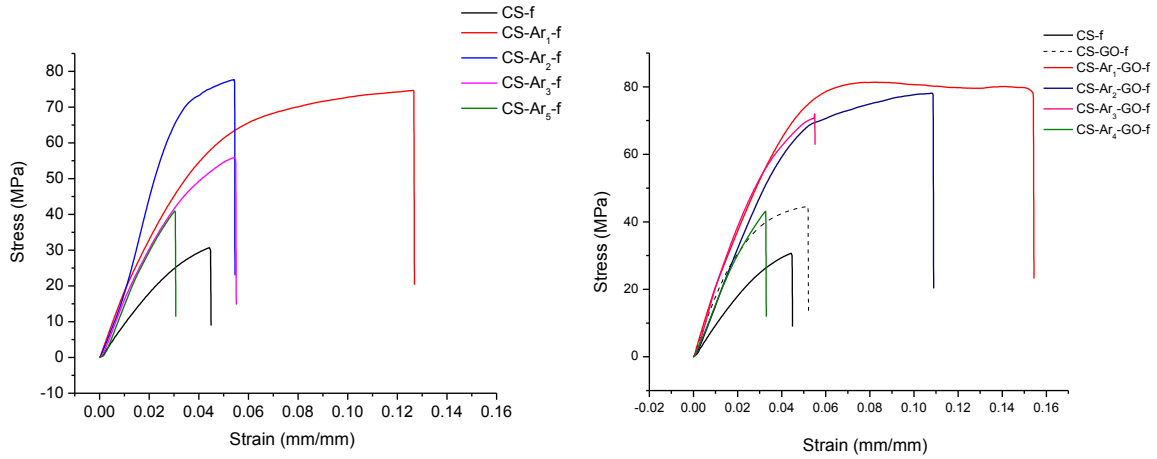


Figure S8: Temperature-dependence aldehyde release from **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

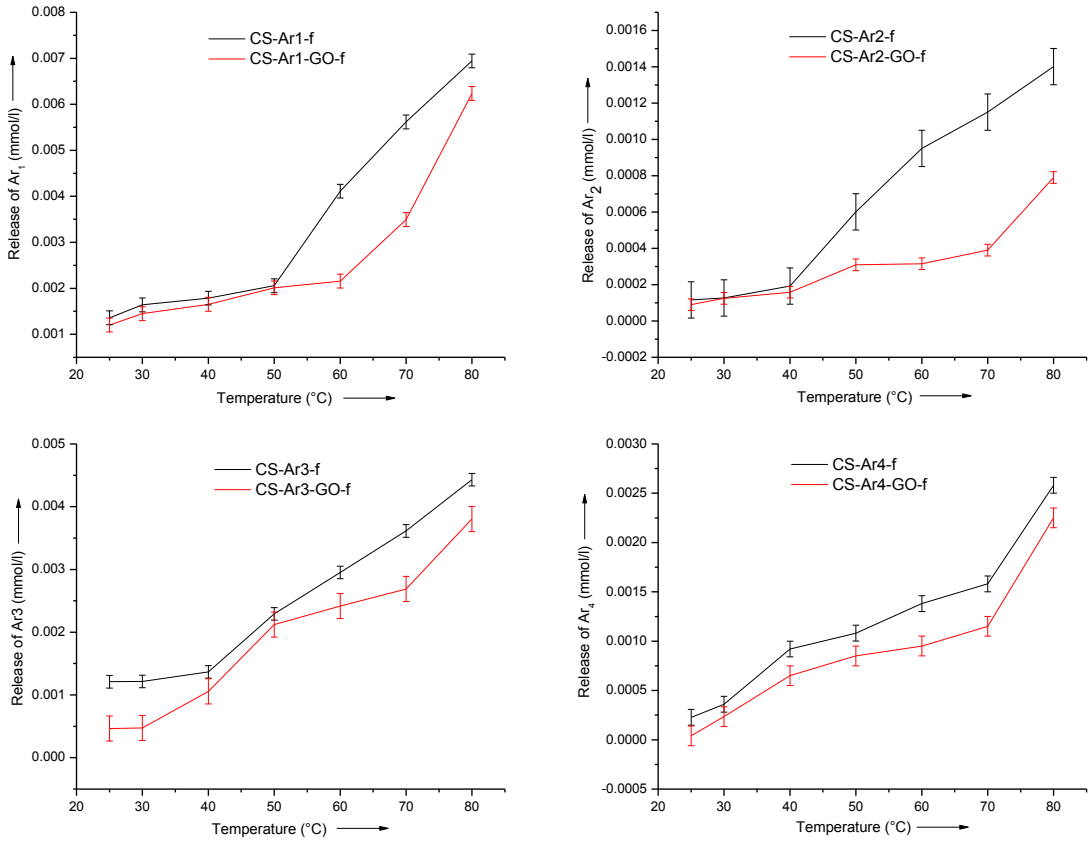


Figure S9: pH-dependence aldehyde release from **CS-Ar$_x$-*f*** and **CS-Ar$_x$-GO-*f***

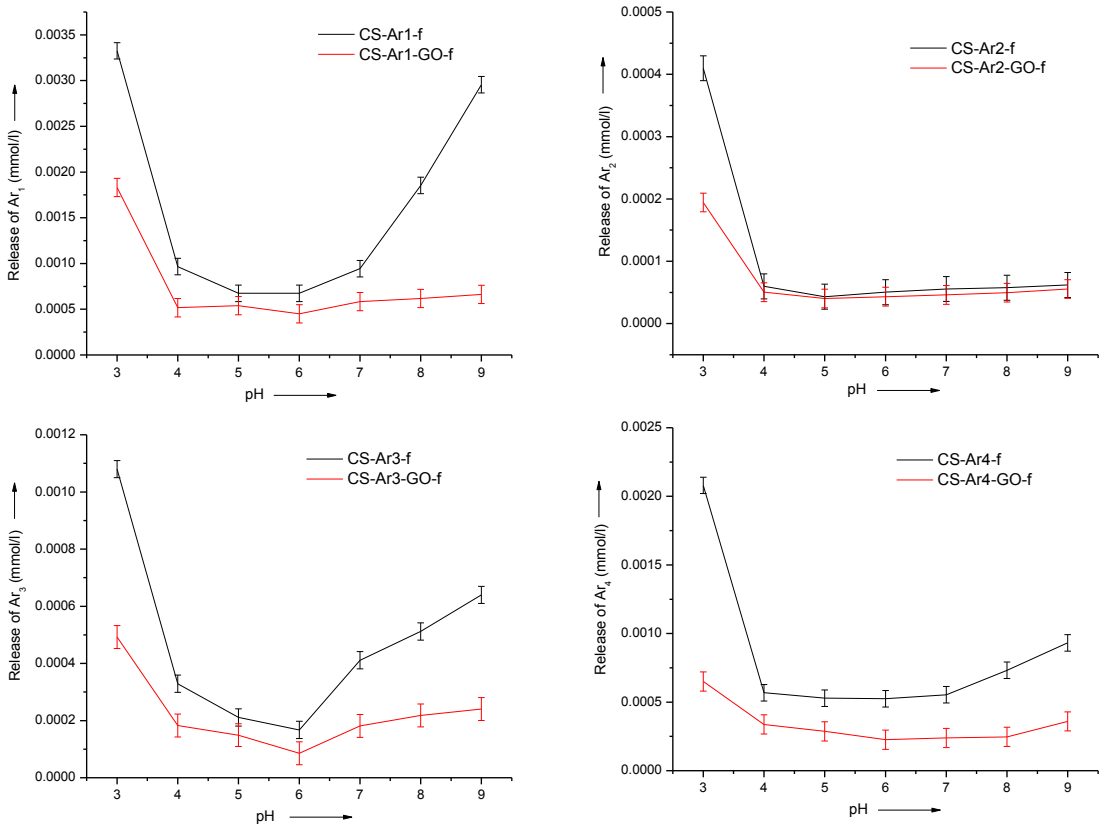


Figure S10: Mechanism of the imine hydrolysis by water under acid, neutral and base conditions.