SUPPORTING INFORMATION

Reducing Emission of Carcinogenic By-Products in the Production of Thermally Reduced Graphene Oxide

Ondřej Jankovský[a], Michal Lojka[a], Michal Nováček[a], Jan Luxa[a], David Sedmidubský[a], Martin Pumera[b], Jiří Kosina[c] and Zdeněk Sofer[a],*

[a] Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Technická 5, 166 28 Prague 6, Czech Republic

[b] Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University Singapore 637371 (Singapore)

[c] Central Laboratories, University of Chemistry and Technology Prague, Technická 5, 166 28 Prague 6, Czech Republic

* author for correspondence; email: zdenek.sofer@vscht.cz

Table SI-1. C/O ratio (at.%) of starting graphite oxides obtained by EDS, Elemental Combustion analysis) ECA and XPS.

Sample	EDS	ECA	XPS
HO-GO	2.4	1.7	3.0
HU-GO	2.5	1.3	2.1

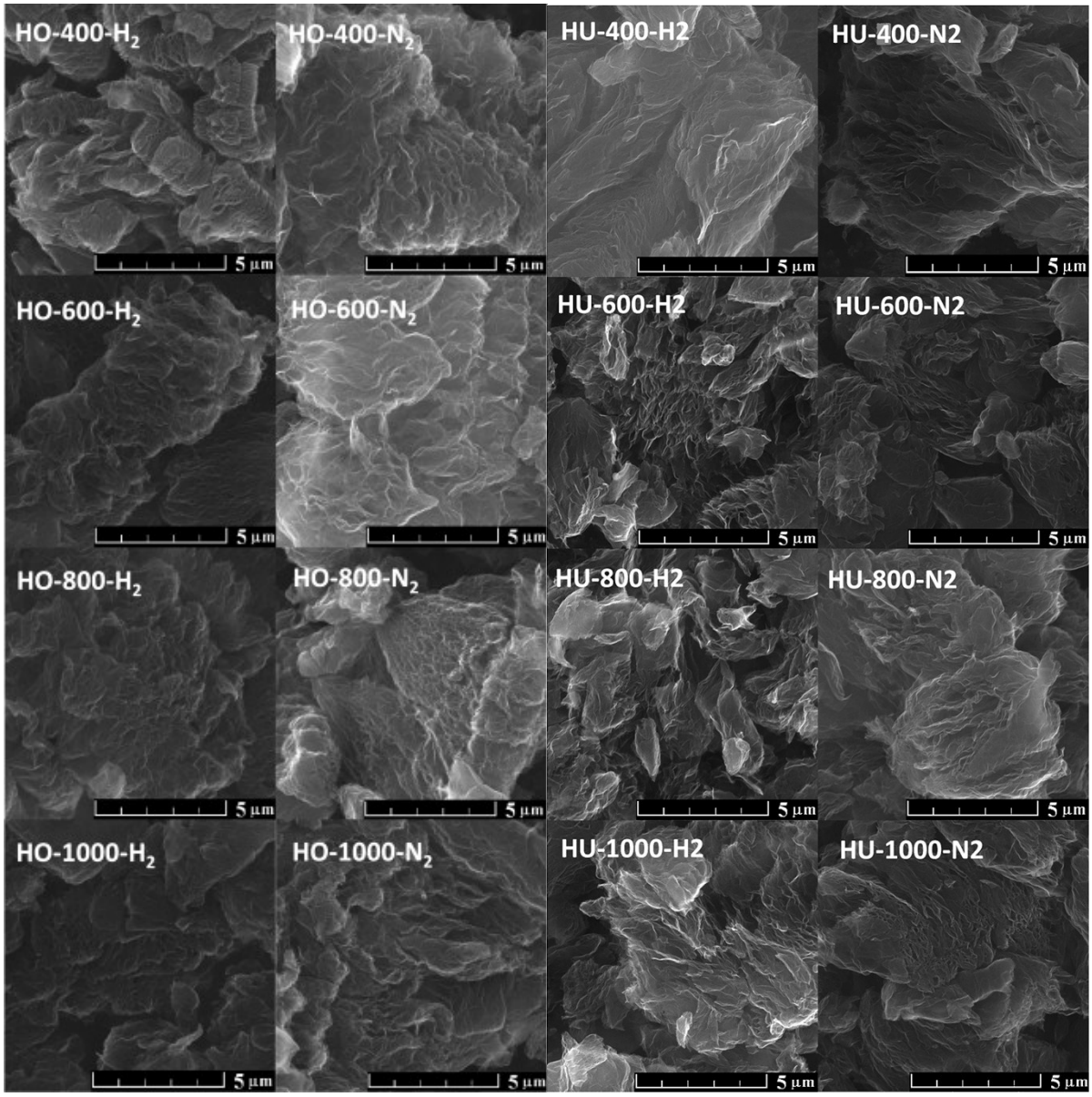

Figure SI 1. Morphology of thermally reduced graphene oxides measured using SEM. Scale bar is 5 µm.

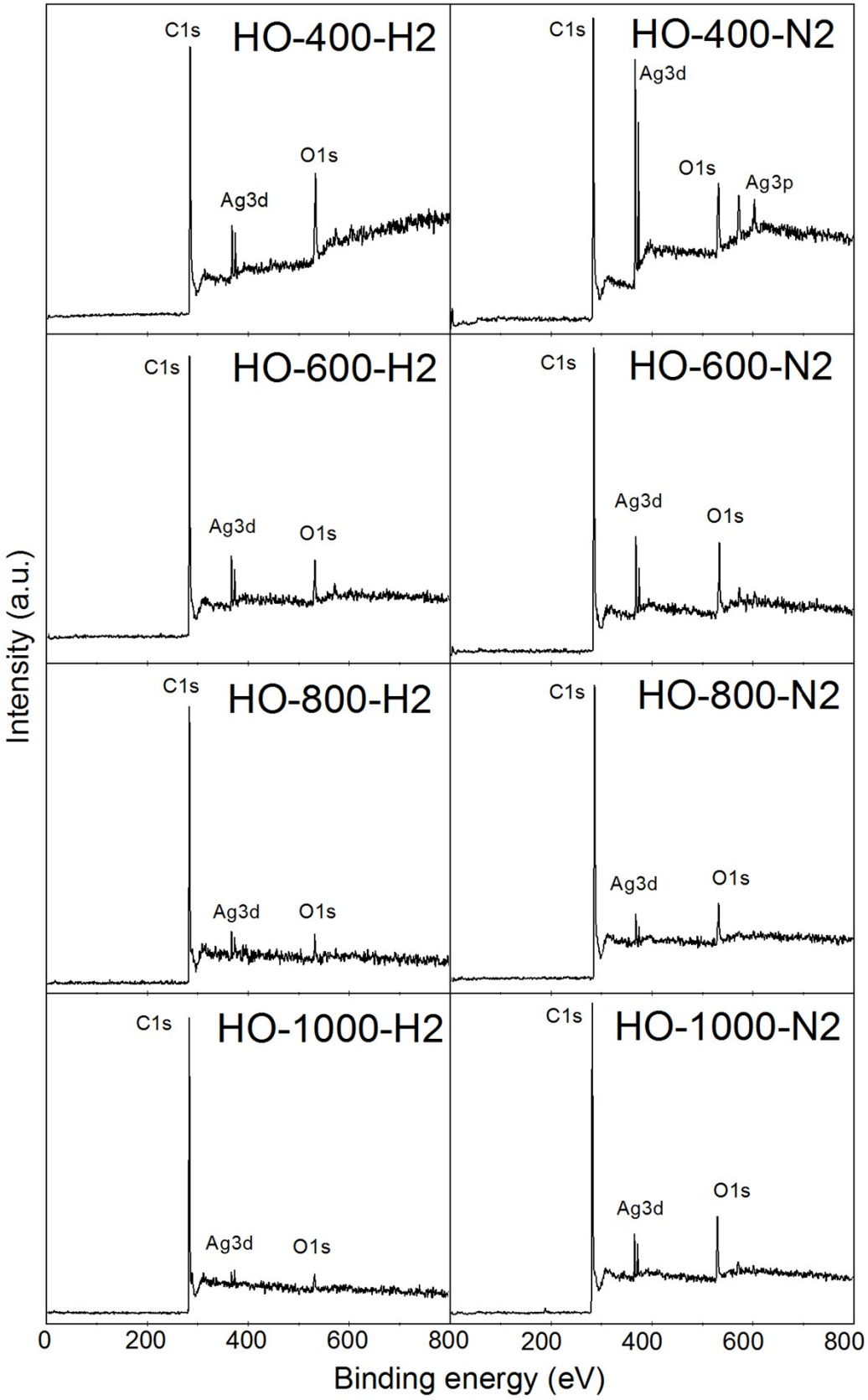

Figure SI 2. XPS survey spectra of thermally reduced graphene oxides prepared from HO-GO

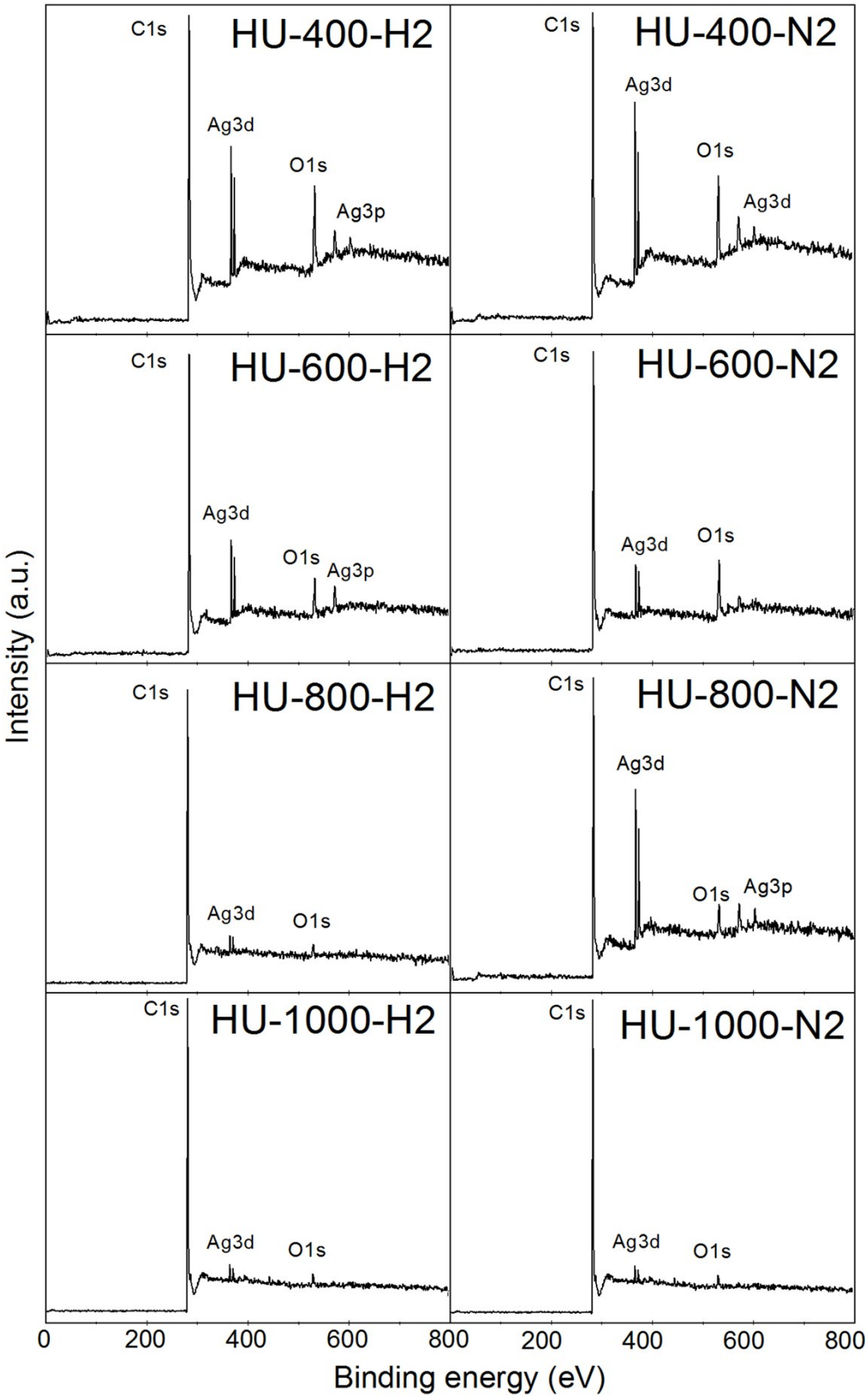

Figure SI 3. XPS survey spectra of thermally reduced graphene oxides prepared from HU-GO

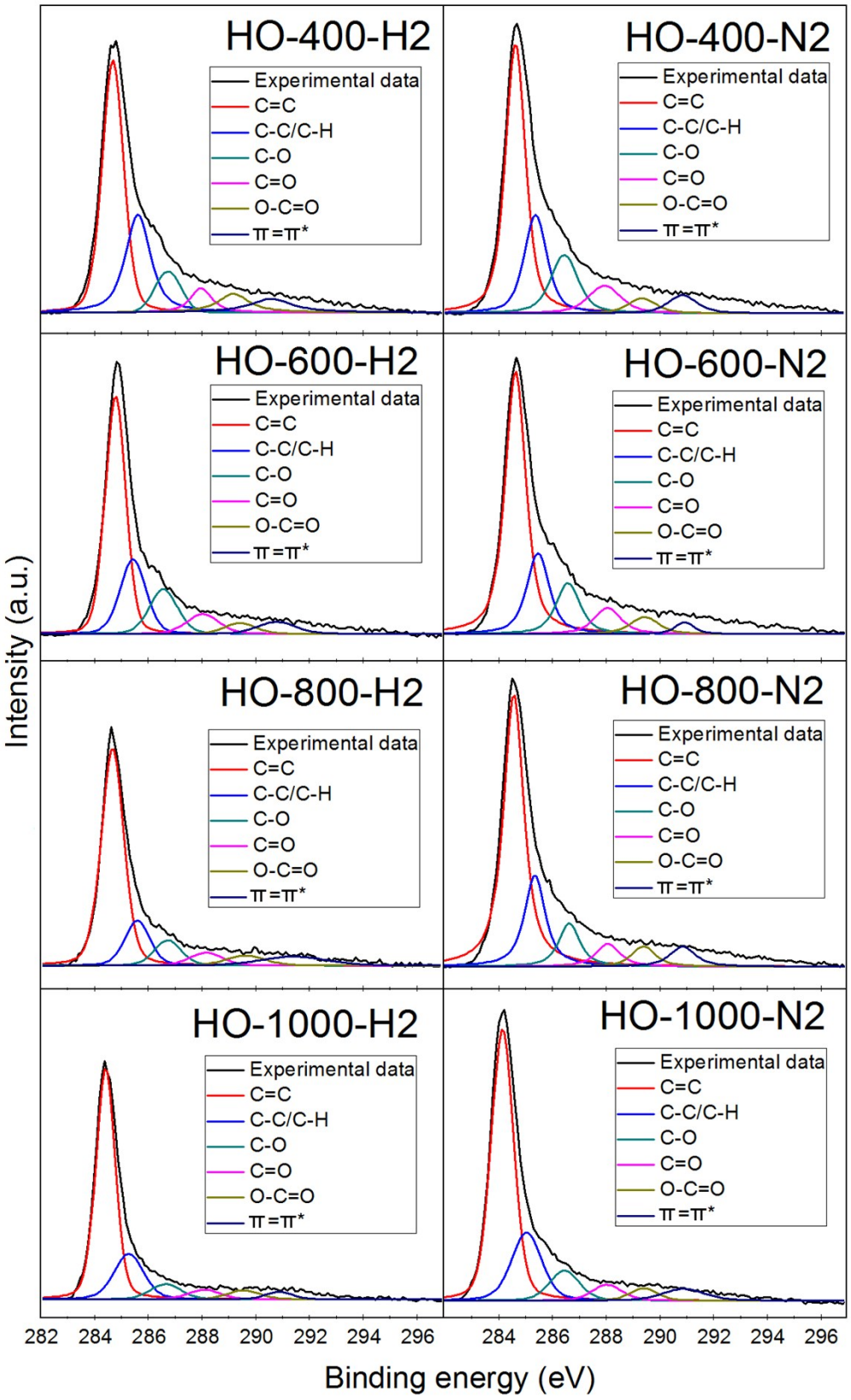

Figure SI 4. High resolution XPS spectra of C 1s of thermally reduced graphene oxides prepared from HO-GO

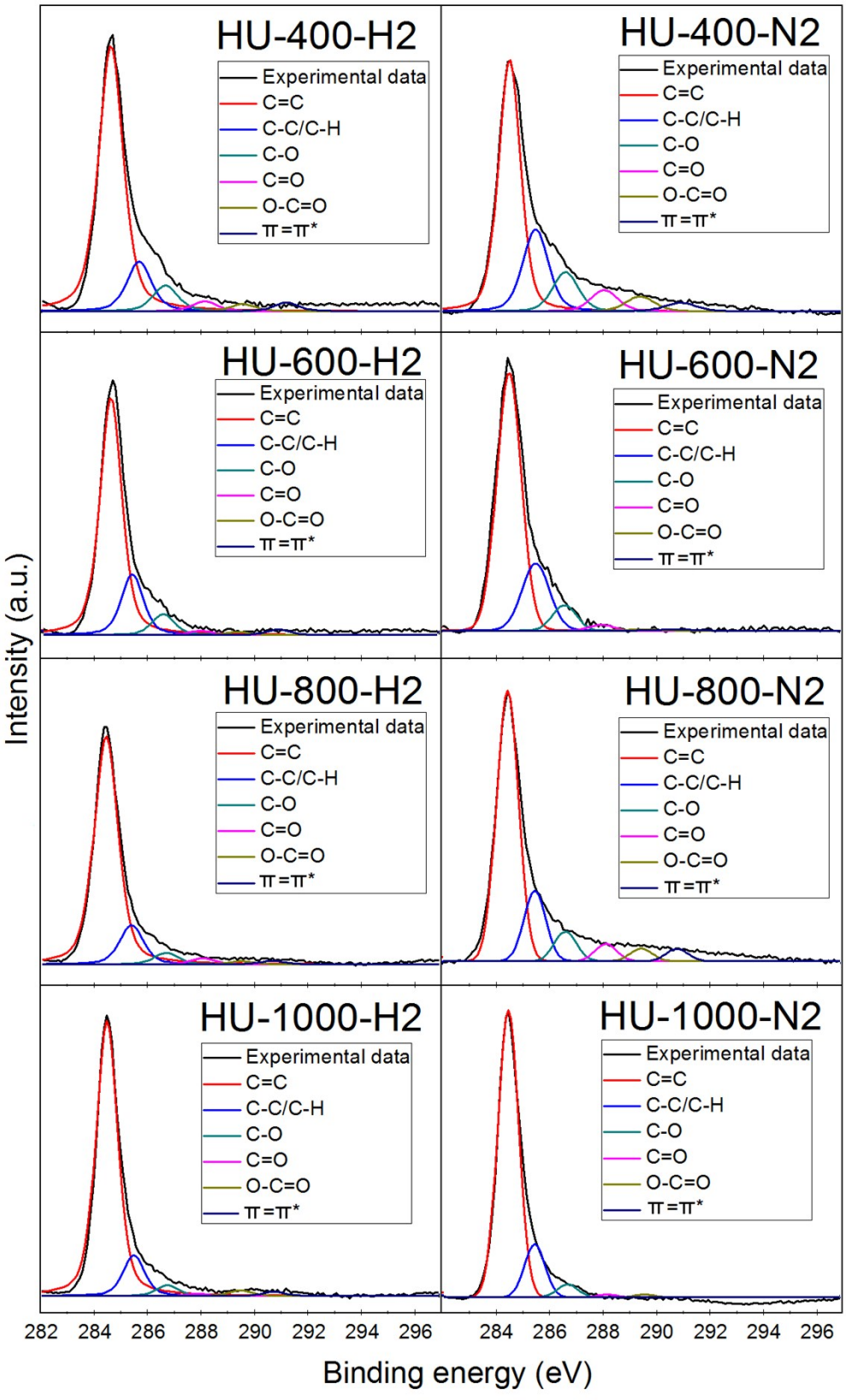

Figure SI 5. High resolution XPS spectra of C 1s of thermally reduced graphene oxides prepared from HU-GO

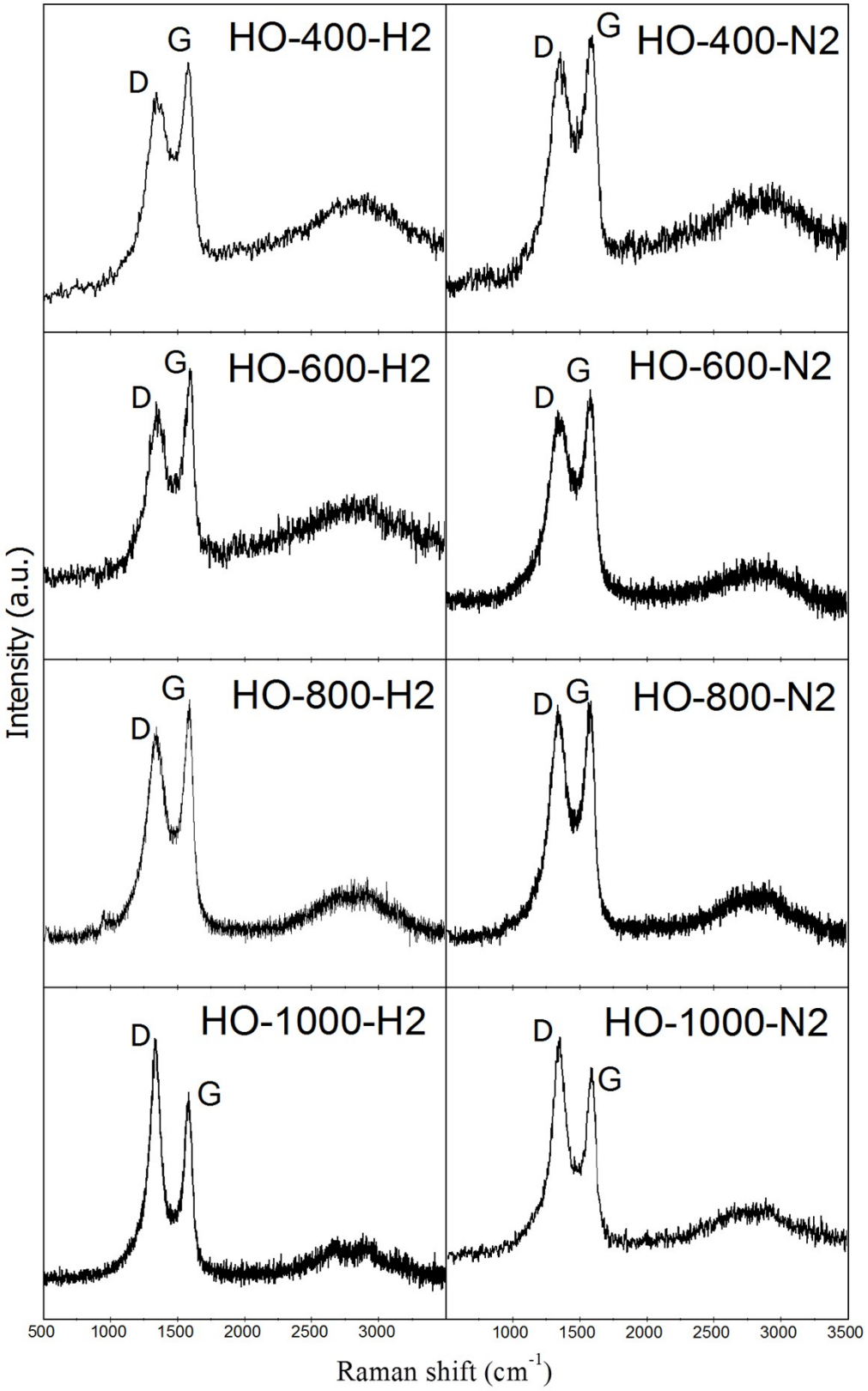

Figure SI 6. Raman spectra of thermally reduced graphene oxides prepared from HO-GO

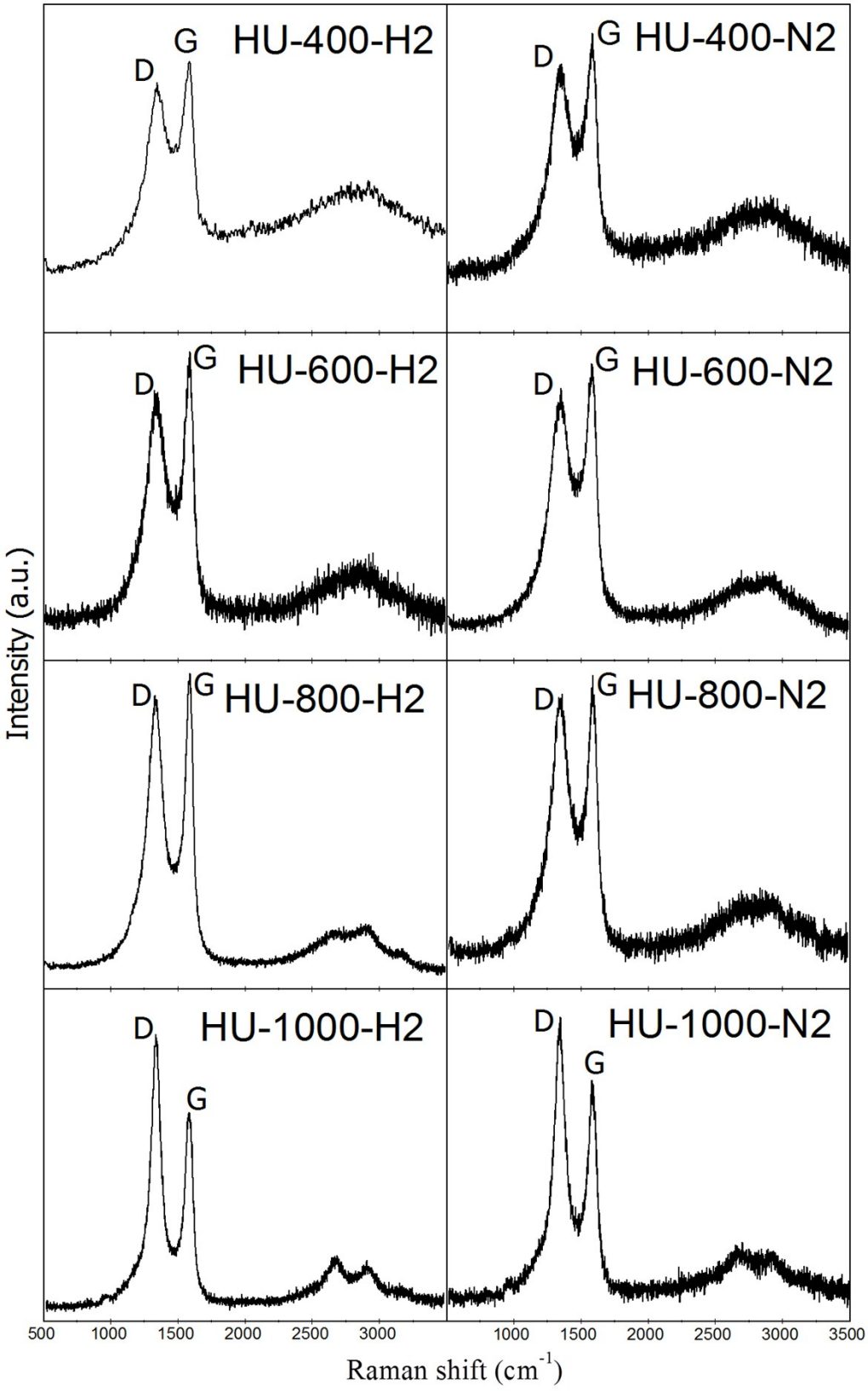

Figure SI 7. Raman spectra of thermally reduced graphene oxides prepared from HU-GO

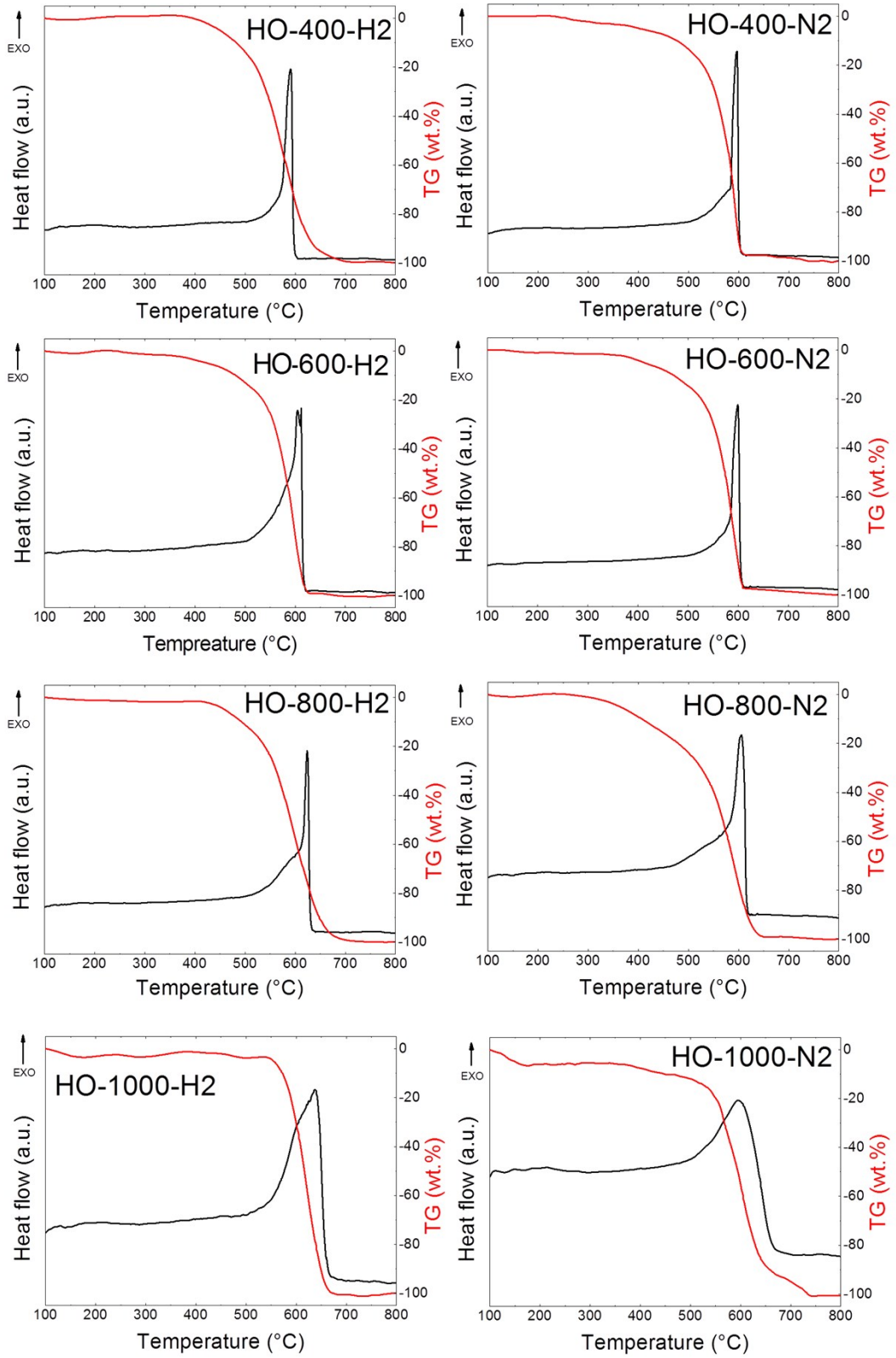

Figure SI 8. Simultaneous thermal analysis of thermally reduced graphene oxides prepared from HO-GO

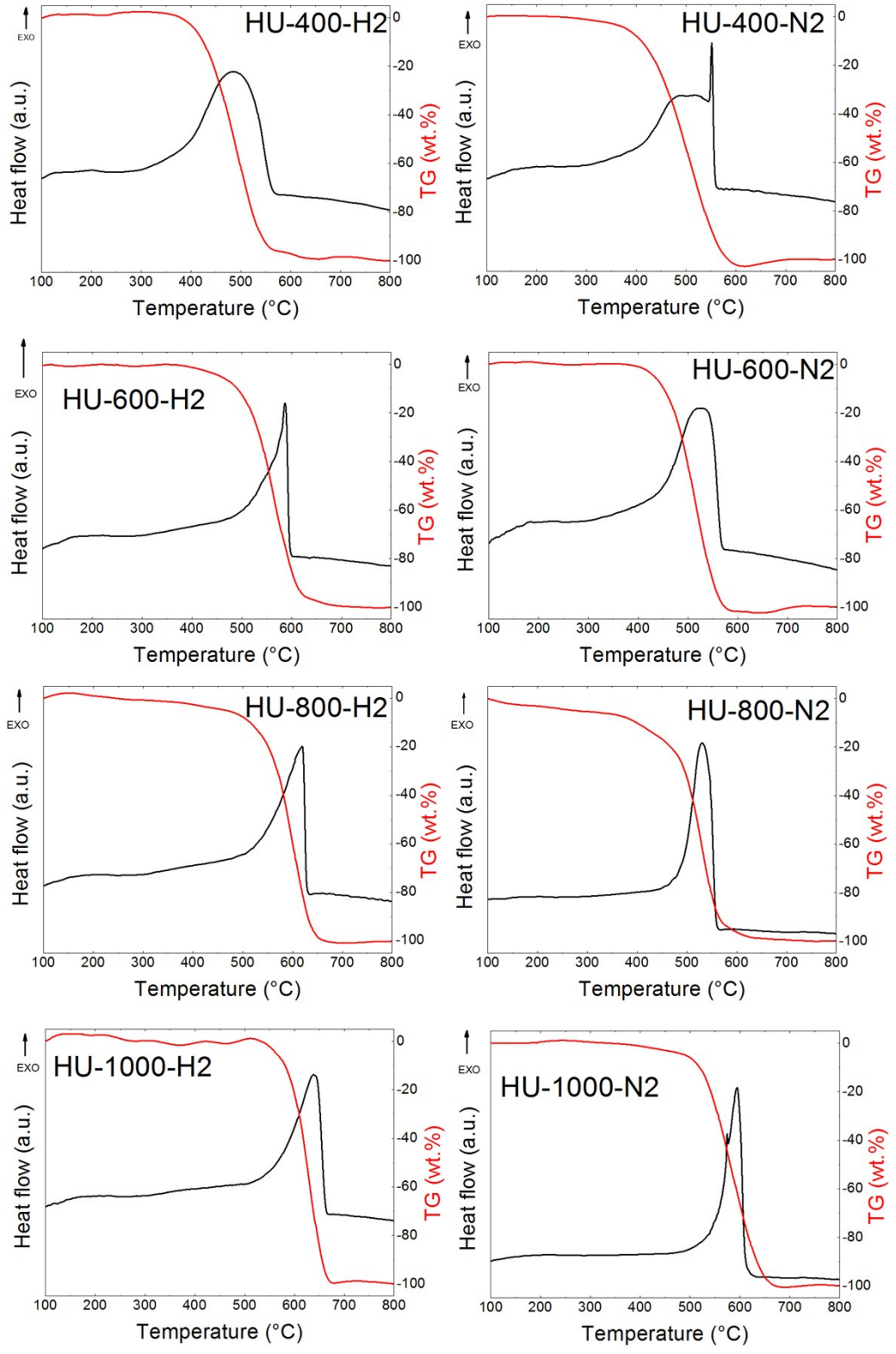

Figure SI 9. Simultaneous thermal analysis of thermally reduced graphene oxides prepared from HU-GO

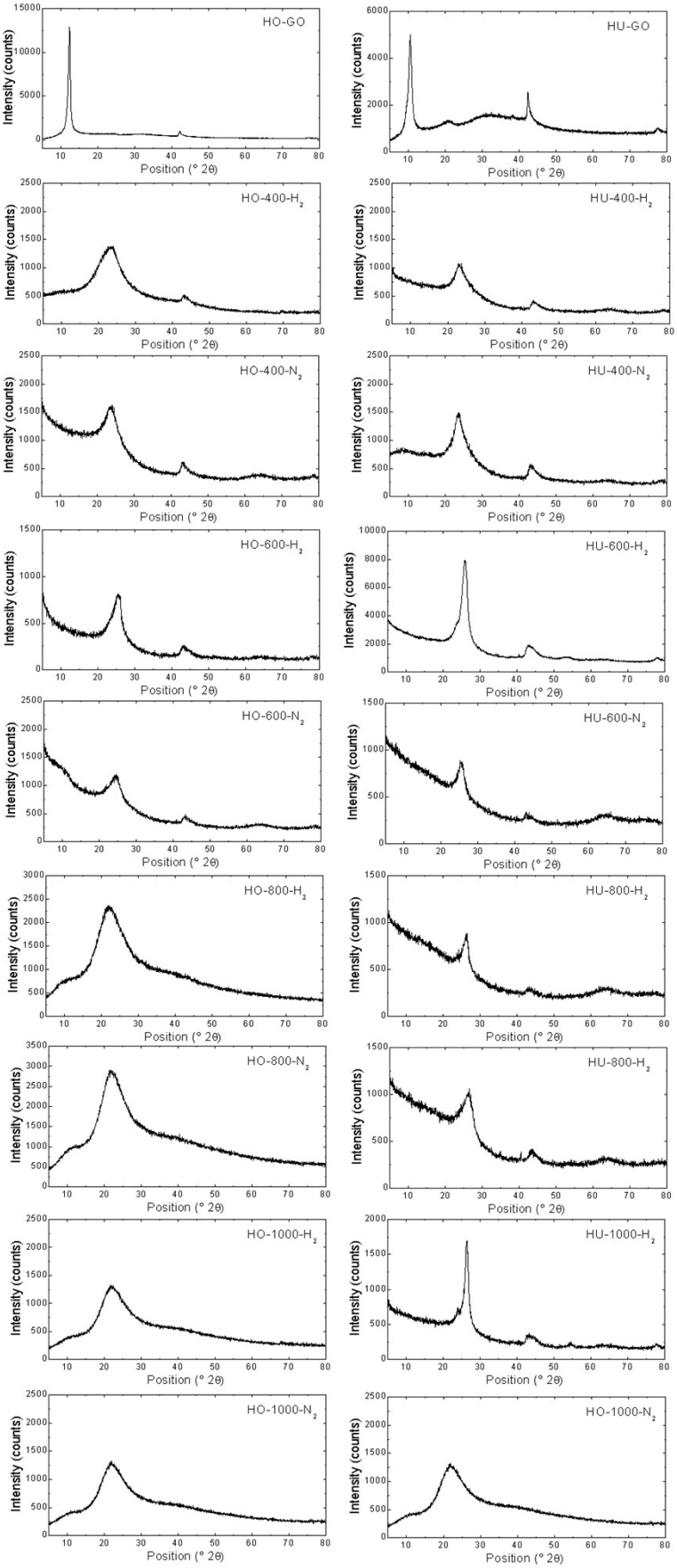

Figure SI 10. XRD patterns of graphene oxides and thermally reduced graphene oxides

Table SI 2. The average number of layers in thermally reduced graphene oxide calculated from broadening of (002) reflection.

Sample	Average number of layers
HO-400-H_2	2.8
HO-600-H_2	4.3
HO-800-H_2	2.5
HO-1000-H_2	3.4
HO-400-N_2	2.7
HO-600-N_2	3.5
HO-800-N_2	3.7
HO-1000-N_2	3.7
HU-400-H_2	3.6
HU-600-H_2	11.5
HU-800-H_2	8.6
HU-1000-H_2	17.9
HU-400-N_2	3.6
HU-600-N_2	5.5
HU-800-N_2	5.2
HU-1000-N_2	5.1

Table SI-3. The specific resistivity of the thermally reduced graphene oxide.

Sample	Specific resistivity (Ω.cm)
HO-400-H_2	0.24
HO-600-H_2	0.22
HO-800-H_2	0.17
HO-1000-H_2	0.06
HO-400-N_2	0.32
HO-600-N_2	0.30
HO-800-N_2	0.15
HO-1000-N_2	0.08
HU-400-H_2	0.33
HU-600-H_2	0.34
HU-800-H_2	0.20
HU-1000-H_2	0.06
HU-400-N_2	0.26
HU-600-N_2	0.20
HU-800-N_2	0.13
HU-1000-N_2	0.08