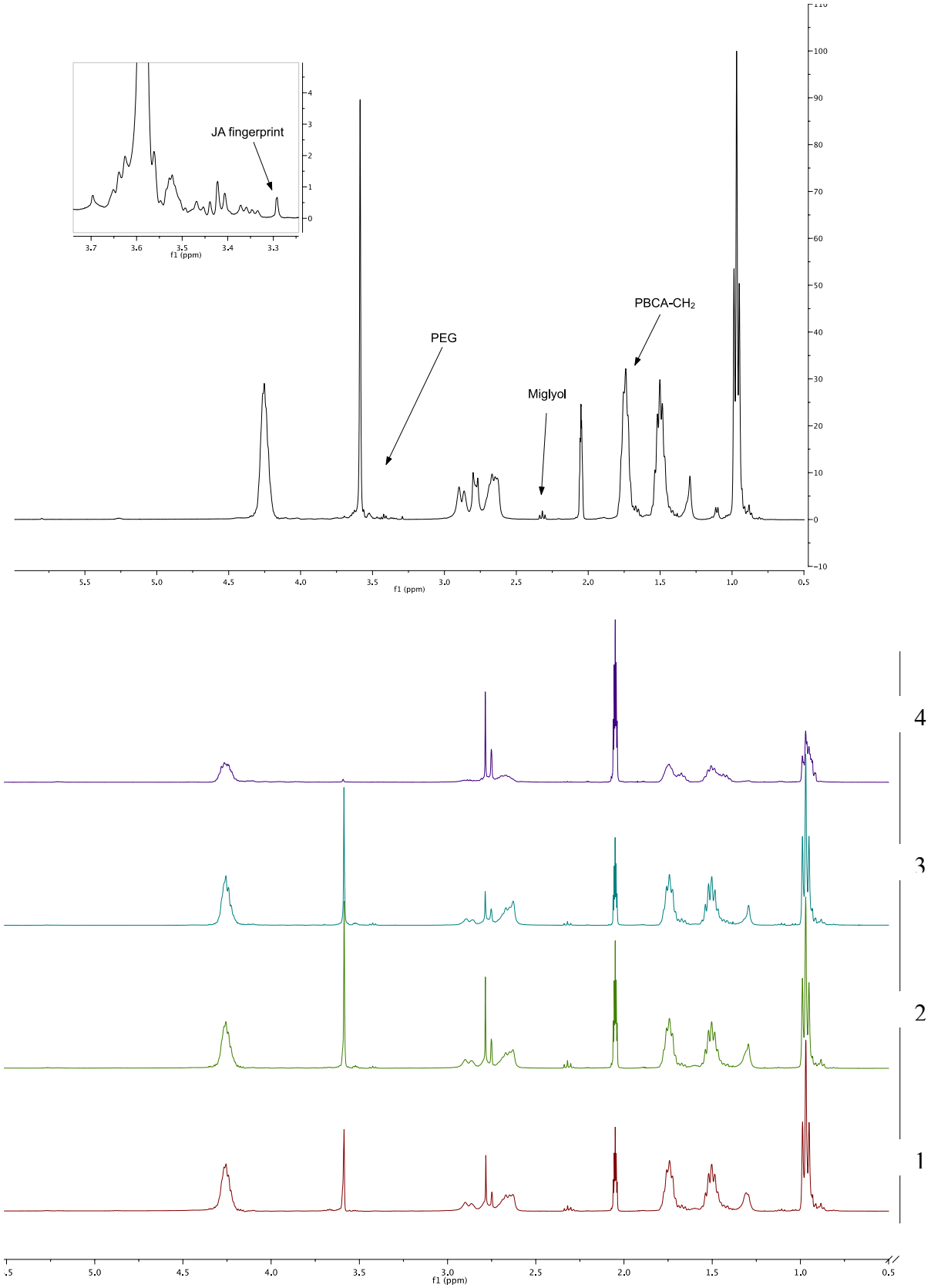

Figure 1: Top: NMR spectra from a JA/Brij NP, inset shows JA fingerprint peak. Bottom: Representative spectra from: 1) Kol/Plu, 2) Kol/Brij, 3)JA/Brij, 4) JA/SDS.

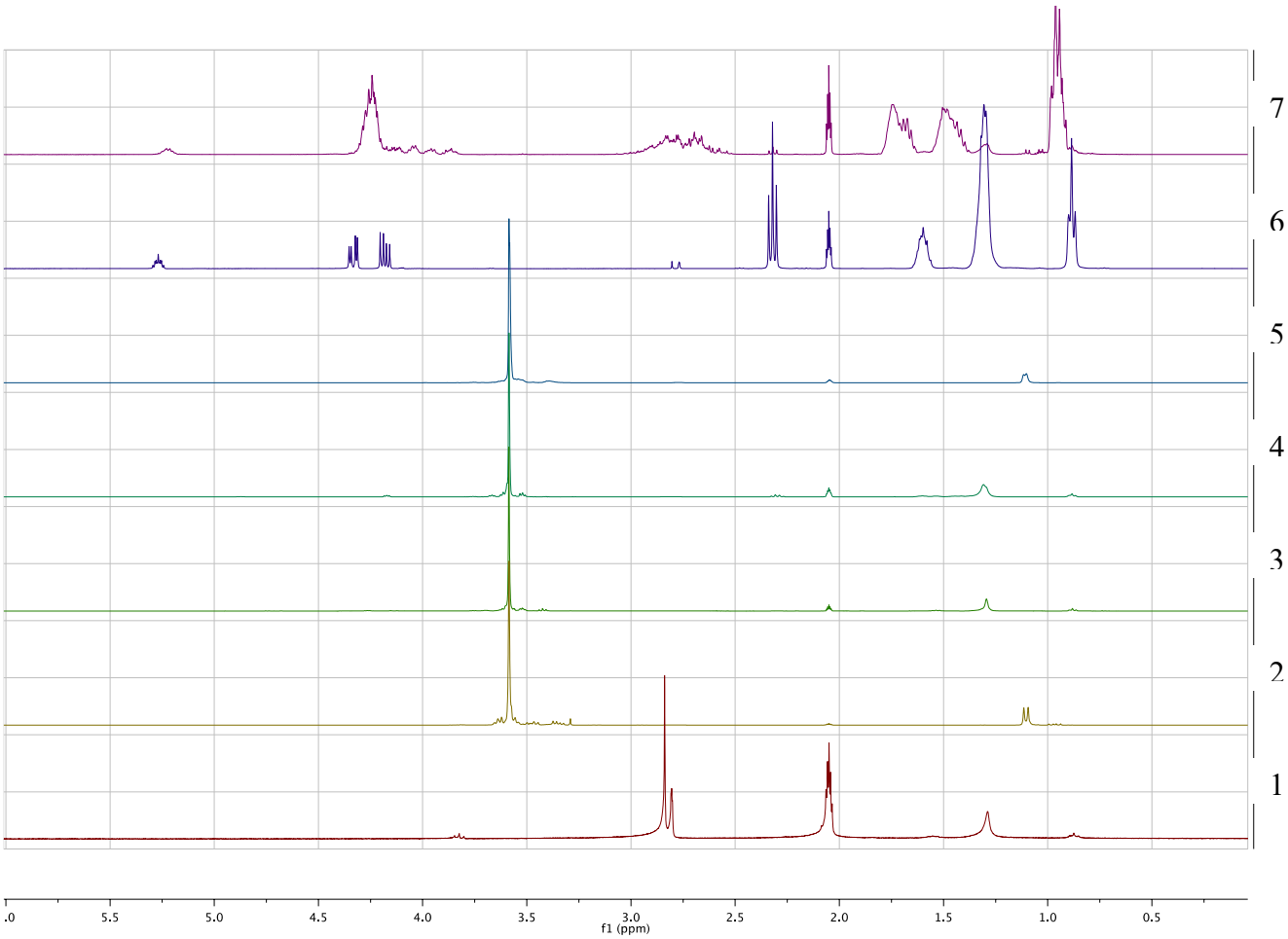

Figure 2: Reference NMR spectra from: 1) SDS, 2) JA, 3) Brij 4) Kol, 5) Plu, 6) Miglyol 810N, 7) PBCA NP without PEG.

Table 1: Constants, units and variables used for PEG density calculations.

Constants	Abbreviation	Value	Unit
MW BCA-mon	MW_{BCA}	153	Da
MW PEG-mon	MW_{PEG}	44	Da
MW migloyl	MW_{mig}	512	Da
Density polymer	ρ	1.148	g/ml
Integral BCA	I_{BCA}	1	
Ratio PEG-CH2 vs. BCA CH2	R_{PEG}	2	
Ratio Migloyl vs BCA CH2	R_{mig}	3	
Avogadros constant	N_A	$6.02x10^{23}$	mol^{-1}

Measurable variables	Abbreviation	Unit
Dry weight polymer	W_{dry}	mg/L
Integral PEG	I_{PEG}	
Integral miglyol	I_{mig}	
Radius NP	r	nm

Calculated variables	Abbreviation	Unit
mol fraction PEG	$molFr_{peg}$	
mol fraction miglyol	$molFr_{mig}$	
mol fraction BCA	$molFr_{BCA}$	
weight fraction PEG	$weightFr_{peg}$	
weight fraction miglyol	$weightFr_{mig}$	
conc PEG in batch	C_{PEG}	M
conc miglyol in batch	C_{mig}	M
Volume NP	V_{NP}	mL
Weight NP	W_{NP}	g/NP
# NP in batch	N_{NP}	NP/mL
Area NP	A_{NP}	nm^2/NP
# PEG on NP	$N_{PEG/NP}$	# PEG/NP
# coverage	$N_{PEG/Area}$	# PEG/nm^{-2}

Equations 1-14:

$$molFr_{PEG} = \frac{I_{PEG}}{I_{PEG} + I_{mig} + I_{BCA}} * R_{mig}^{-1} \quad (1)$$

$$molFr_{mig} = \frac{I_{mig}}{I_{PEG}+I_{mig}+I_{BCA}} * R_{mig}^{-1} \quad (2)$$

$$molFr_{BCA} = 1 - molFr_{PEG} - molFr_{mig} \quad (3)$$

$$weightFr_{PEG} = \frac{molFr_{PEG} * MW_{PEG}}{molFr_{PEG} * MW_{PEG} + molFr_{mig} * MW_{mig} + molFr_{BCA} * MW_{BCA}} \quad (4)$$

$$weightFr_{mig} = \frac{molFr_{mig} * MW_{mig}}{molFr_{PEG} * MW_{PEG} + molFr_{mig} * MW_{mig} + molFr_{BCA} * MW_{BCA}} \quad (5)$$

$$C_{PEG} = \frac{W_{dry} * weightFr_{PEG}}{MW_{PEG} * V} \quad (6)$$

$$C_{mig} = \frac{W_{dry} * weightFr_{mig}}{MW_{mig} * V} \quad (7)$$

$$V_{NP} = \frac{4}{3} * \pi r^3 \quad (8)$$

$$W_{NP} = V_{NP} * \rho \quad (9)$$

$$N_{NP} = \frac{W_{dry}}{W_{NP}} \quad (10)$$

$$A_{NP} = 4\pi r^2 \quad (11)$$

$$N_{\frac{PEG}{NP}} = C_{PEG} * \frac{N_A}{N_{NP}} \quad (13)$$

$$N_{\frac{PEG}{NP\ area}} = \frac{N_{\frac{PEG}{NP}}}{A_{NP}} \quad (14)$$

Table 2: NP size in water, 8% BSA and rat serum (RS), measured by NTA.

	Water	8% BSA	RS
JA/SDS	222,4	179,6	178,6
JA/Brij	143,5	166,1	180,8
Kol/Brij	157,1	168,1	237,3
Kol/Plu	141,9	157,5	211,6

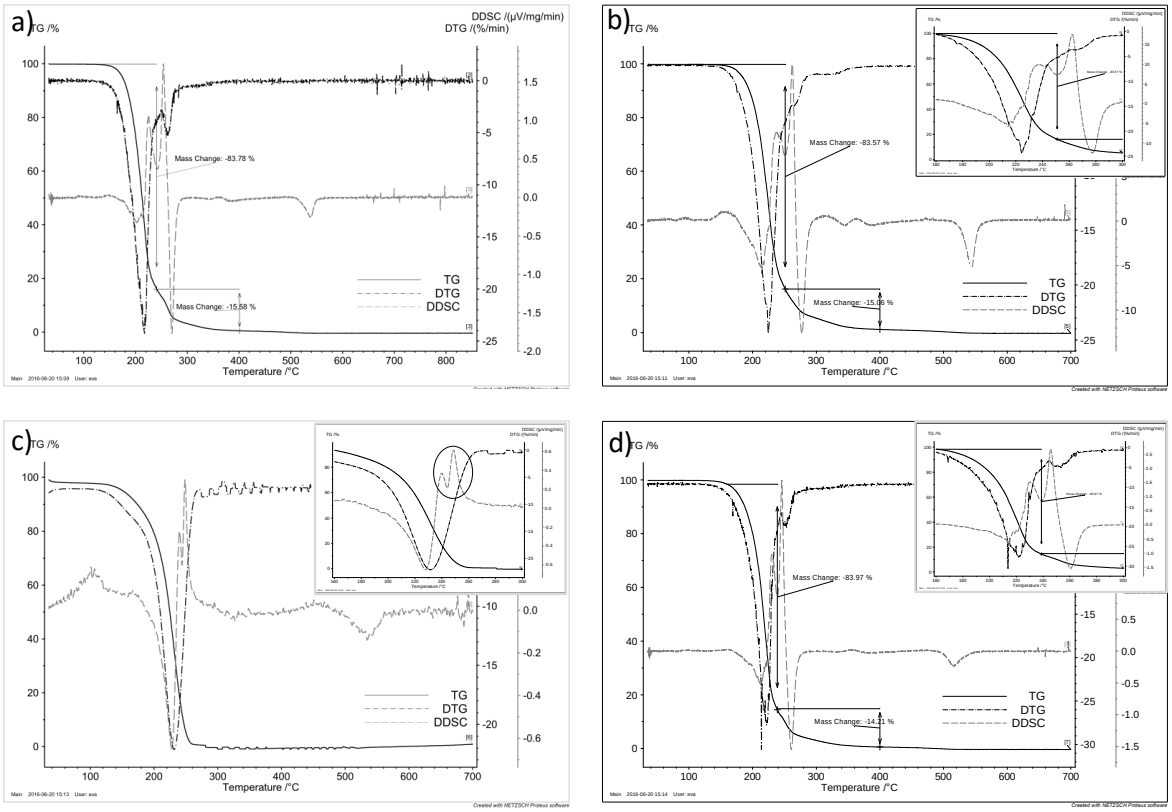

Figure 3. TGA-DSC curves of NPs a) Kol/Brij, b) Kol/Plu, c) JA/SDS and d) JA/Brij for the determination of PEG amount (wt%) of the total particle mass. The inset figures in the right upper corner of image b)-d) are zoomed images of the temperature interval 160-300°C, showing the region at which the combustion of PEG starts at T~240-250°C, proceeding up to T~400°C.

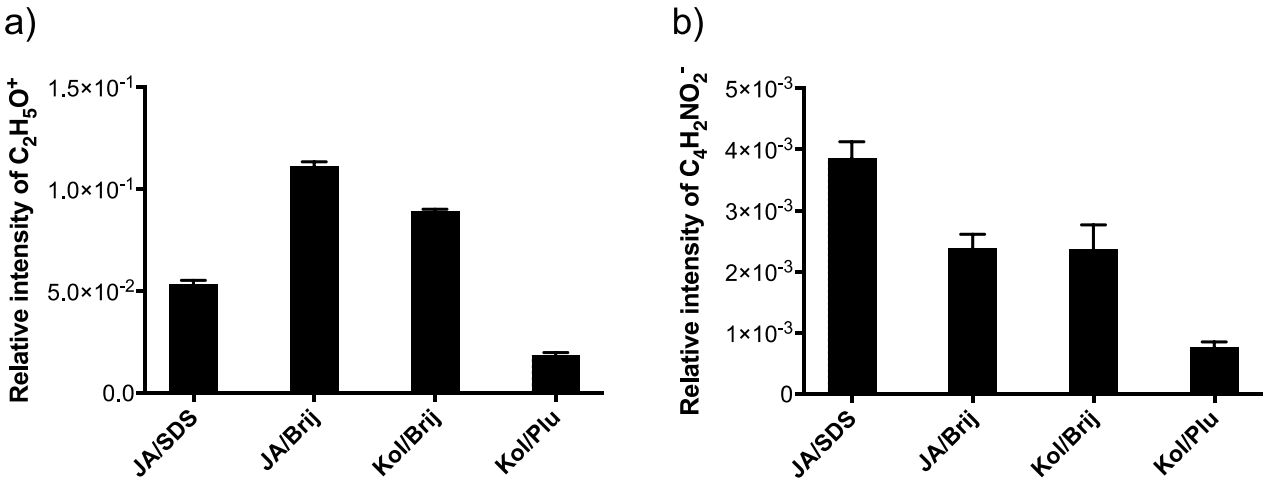

Figure 4: ToF-SIMS data from a) the PEG fragment $C_2H_5O^+$ and from b) the PBCA fragment $C_4H_2NO_2^-$. N=4