

Nucleation and Crystallization of PA6 Composites Prepared by T-RTM: Effects of Carbon and Glass Fiber Loading

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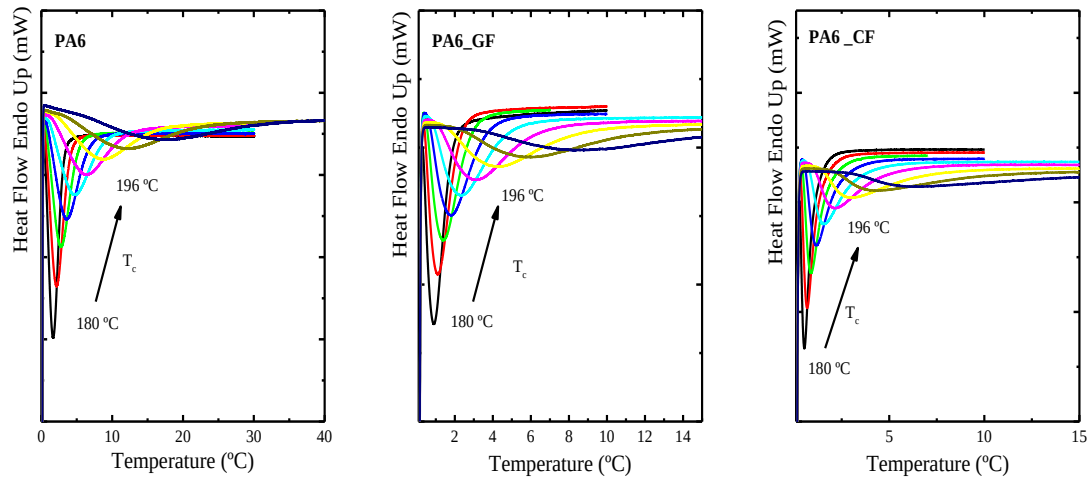


Figure SI 1. Isothermal crystallization exotherms of neat PA6 and for the glass and carbon fiber composites.

Table SI 1. Data obtained using Avrami equation.

PA6	n	$K \text{ (min}^{-n}\text{)}$	$\tau_{50\% \text{ theo (min)}}$	$\tau_{50\% \text{ exp (min)}}$	
180 °C	2.29	2.88E-1	1.468	1.415	0.9998
182 °C	2.22	1.71E-1	1.879	1.802	0.9998
184 °C	2.16	1.05E-1	2.391	2.29	0.9998
186 °C	2.15	6.42E-2	3.029	2.927	0.9999
188 °C	2.09	4.19E-2	3.816	3.662	0.9999
190 °C	2.11	2.20E-2	5.128	4.997	1
192 °C	2.1	1.21E-2	6.878	6.702	0.9999
194 °C	2.09	6.10E-3	9.597	9.37	0.9999
196 °C	2.04	3.27E-3	13.74	13.74	1

PA6-GF	n	$K \text{ (min}^{-n}\text{)}$	$\tau_{50\% \text{ theo (min)}}$	$\tau_{50\% \text{ exp (min)}}$	R^2
180 °C	2.23	1.74	0.661	0.673	0.9999
182 °C	2.22	9.18E-1	0.881	0.907	0.9999
184 °C	2.19	5.80E-1	1.085	1.108	0.9999
186 °C	2.27	2.92E-1	1.463	1.513	0.9999
188 °C	2.24	1.71E-1	1.869	1.924	0.9999
190 °C	2.26	8.70E-2	2.501	2.574	0.9999
192 °C	2.29	4.37E-2	3.349	3.432	1
194 °C	2.22	2.60E-2	4.402	4.477	1
196 °C	2.30	6.84E-3	6.589	6.726	1

PA6-CF	n	$K \text{ (min}^{-n}\text{)}$	$\tau_{50\% \text{ theo (min)}}$	$\tau_{50\% \text{ exp (min)}}$	R^2
180 °C	2.61	1.15E1	0.34	0.37	0.9997
182 °C	2.57	5.10	0.46	0.497	0.9998
184 °C	2.59	1.89	0.678	0.755	0.9996
186 °C	2.46	8.48E-1	0.921	1.021	0.9997

188 °C	2.28	4.84E-1	1.171	1.277	0.9998
190 °C	2.22	2.39E-1	1.617	1.767	0.9998
192 °C	2.06	1.57E-1	2.057	2.206	0.9999
194 °C	2.3	3.89E-2	3.493	3.917	0.9996
196 °C	2.17	2.37E-2	4.856	5.377	0.9996