Article

Relationships between Size Distribution, Morphological
Characteristics, and Viscosity of Cellulose Nanofibril Dispersions

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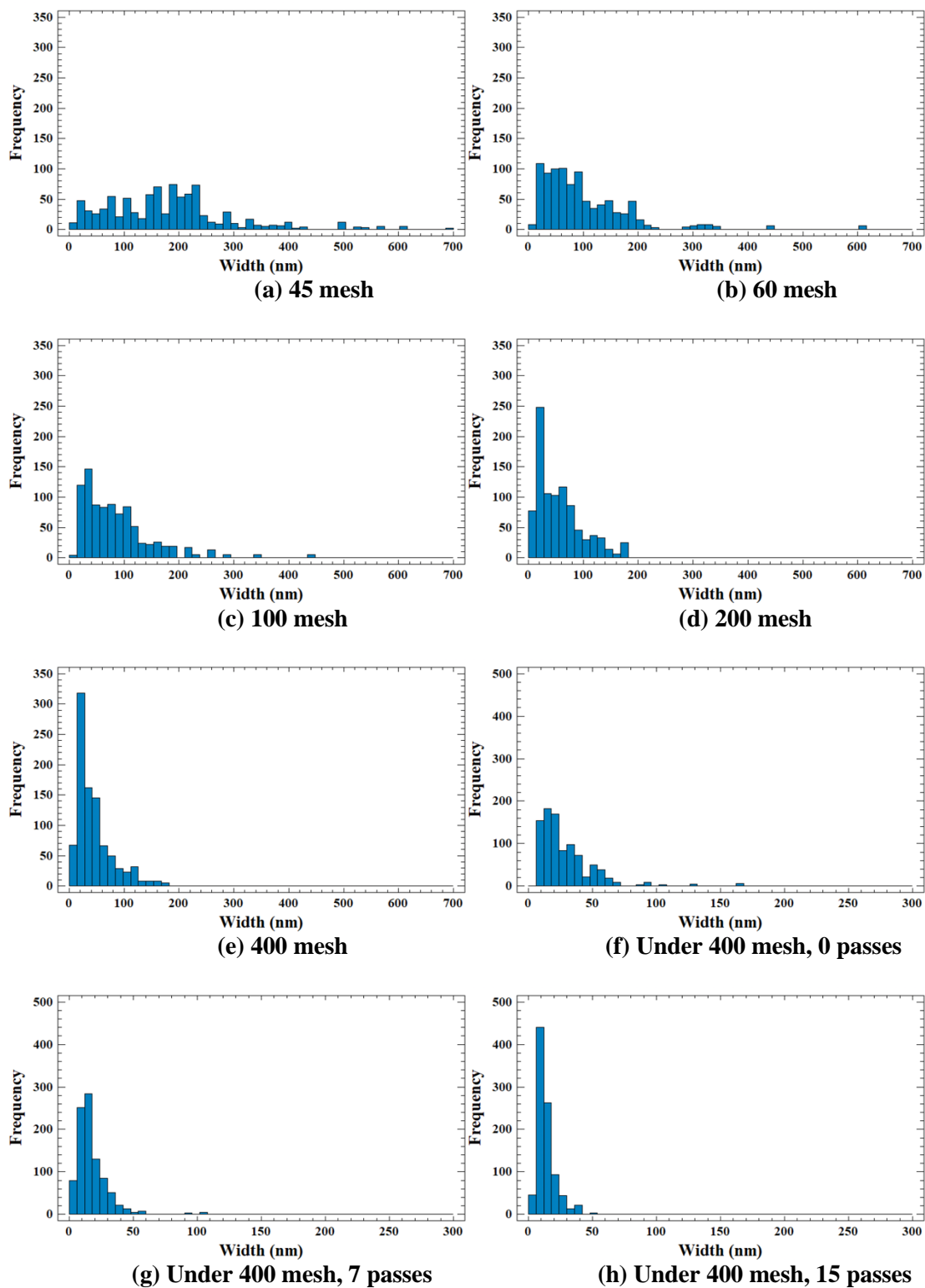[2]   Facultad de Ciencias Forestales, Universidad de Concepción, Concepción 4030000 Chile
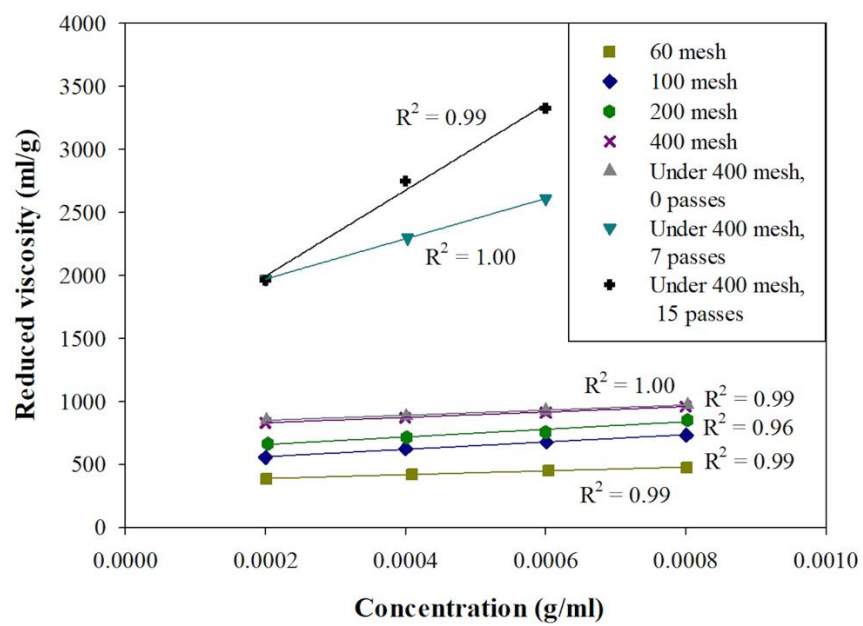[3]   Centro de Biotecnología, Universidad de Concepción, Concepción 4030000, Chile
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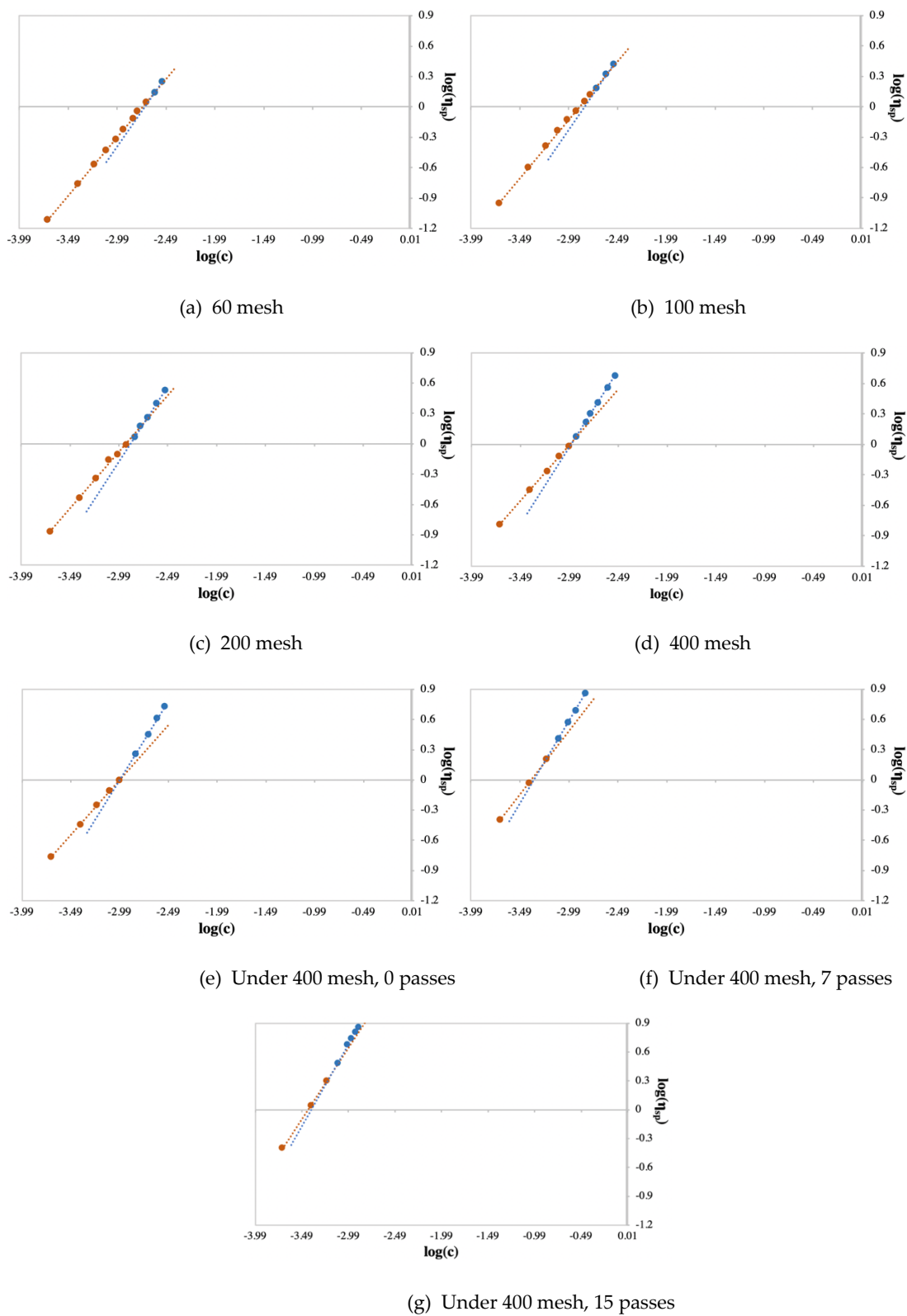*   Correspondence: gralbornoz@udec.cl

This file includes: Supplementary **Figures S1, S2, S3,** and **S4,** and **Table S1**

Figure S1. Width distributions of CNFs. *TEM images are available contacting the corresponding author.*

Figure S2. Variation in the reduced viscosity according to the concentration of CNFs in the dilute region.
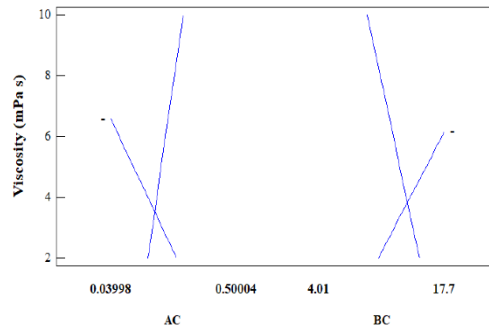
(a) 60 mesh

(b) 100 mesh

(c) 200 mesh

(d) 400 mesh

(e) Under 400 mesh, 0 passes

(f) Under 400 mesh, 7 passes

(g) Under 400 mesh, 15 passes

Figure S3. Variation in the specific viscosity, η_{sp}, according to the concentration, c (g/ml), of the different fractions of CNFs. All the coefficients of determination of the regressions were higher than 0.98.

Table S1. Regression coefficient for viscosity.

$$\eta = \eta_0 + a_1 \cdot c + a_2 \cdot L + a_3 \cdot p + a_4 \cdot c \cdot p + a_5 \cdot L \cdot p$$

Constant	Estimated coefficient
a_1	-20.88
a_2	0.6225
a_3	0.01453
a_4	0.2209
a_5	-0.005438

where η is the viscosity (mPa s), η_0 is the viscosity of the solvent (mPa s), c is the concentration (% g/ml), L is the average length (μm), p is the aspect ratio, and a_i is a constant.

Figure S4. Interaction plot for the viscosity of CNF dispersions. *A: Concentration, B: Length, and C: Aspect ratio*