

Supplementary Material

Lignin–Quercetin Hybrid Colloidal Particles as Sustainable Pickering Emulsifiers: A Bio-Based and Functional Approach

Barbara Miqueletti de Oliveira ^{1,3}, Giovana Colucci ¹, Tatiana B. Schreiner ¹, Gert Preegel ², Lucimara Lopes da Silva ³, Arantzazu Santamaria-Echart ¹ and Maria-Filomena Barreiro ^{1,*}

¹ CIMO, LA SusTEC, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal; barbaraoliveira@ipb.pt (B.M.d.O.); giovana.colucci@ipb.pt (G.C.); tatianas@ipb.pt (T.B.S.); asantamaria@ipb.pt (A.S.-E.)

² Fibenol Biorefinary & Laboratories, Tallinn, Estonia; gert.preegel@fibenol.com (G.P.)

³ Departamento de Engenharia Química, Universidade Tecnológica Federal do Paraná (UTFPR), Campus Londrina, Londrina 86036-370, Brazil; lucimarasilva@utfpr.edu.br (L.L.d.S.)

* Correspondence: barreiro@ipb.pt

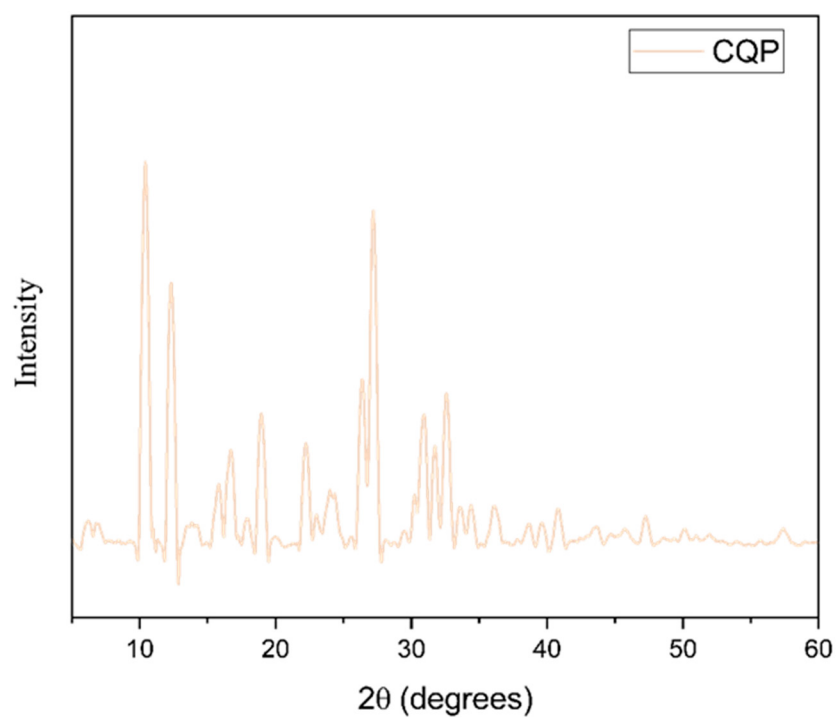


Figure S1. X-ray diffraction of colloidal quercetin particles (CQP).

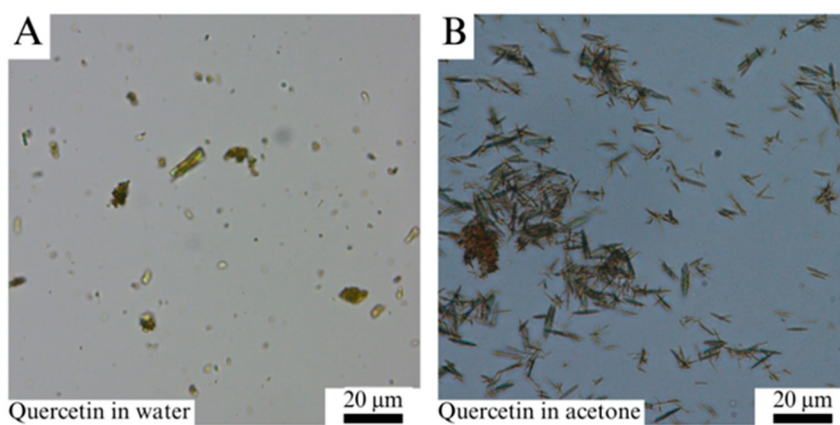


Figure S2. Optical microscopy of pristine quercetin (x400 magnification): (A) Quercetin-water solution; (B) Quercetin-acetone solution.

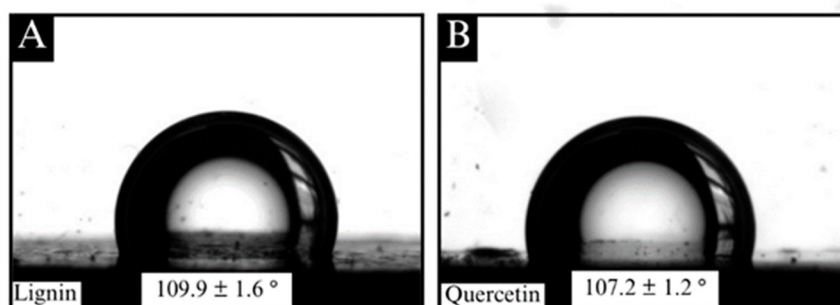


Figure S3. The three-phase contact angle of pristine lignin and quercetin.

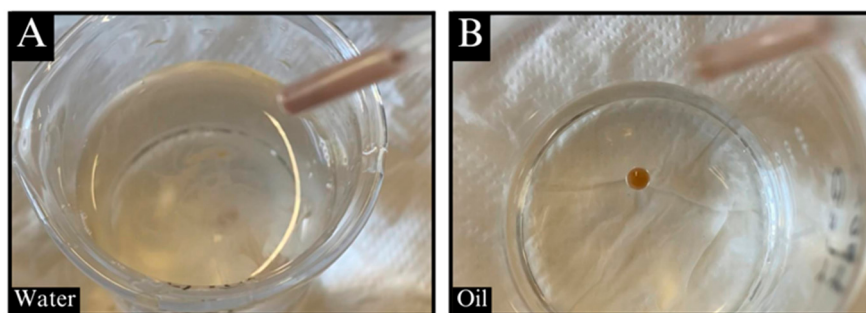


Figure S4. Drop test of the emulsion: (A) beaker filled with water; (B) beaker filled with oil (Miglyol 812).

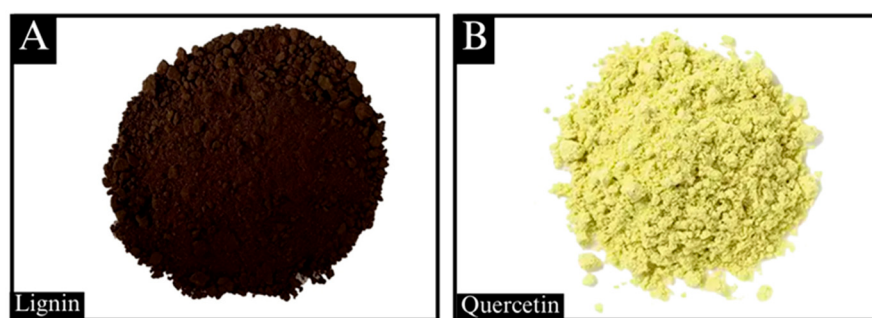


Figure S5. Lignin and quercetin in their native state: (A) Pristine lignin powder; (B) Pristine quercetin powder.