



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Mehmet Cabuk

Type (Academic or Industrial): Academic

Country: Turkey (TR)

Leadership position in the COST: Participant on CA18224

Working Group in which you are involved: WG1

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Laboratory/Company: 1. Research Laboratory of Metallurgy and Material Engineering, University of Mersin, Mersin, Turkey.

2. Smart Materials-Electrorheology Research Lab., Department of Chemistry, University of Gazi, Ankara, Turkey.

Laboratory/Company info (limited to 400 characters):

1. This research group focuses on synthesis, characterization and modification of natural or synthetic polymers and composites. Biodegradable polymers, clay minerals and green composites are the main materials researched. Personnel: 1 researcher and 3 master students.
2. This research group examines rheological properties of synthesized materials under electric field strength. Also, colloidal properties, electrokinetic properties and creep-recovery behaviour of the materials investigates. Personnel: 4 researchers and leading researchers, 2 PhD students and 3 master students.

Link to the home page of the Laboratory/Company:

<http://www.mersin.edu.tr/akademik/muhendislik-fakultesi/bolumler/metalurji-ve-malzeme-muhendisligi-bolumu/ogretim-elemanlari>

<http://kimya.gazi.edu.tr/>

Fields of expertise (limited to 400 characters):

- Synthesis, characterization and modification of polymers and composites.
- Natural polymers and green composites.
- Clay/Polymer composites.
- Conducting polymers (polyaniline, polypyrrole, polythiophene etc.).
- Smart materials: Electro-magneto-rheological fluids, electrorheological properties and Electrorheological materials.
- Electrokinetic, zeta potential, colloidal dispersions, surface charge of particles.
- Antibacterial and antifungal activities of materials.
- Electrical and optoelectronic properties of materials.

5 Main publications or patents:

- Cabuk, M., Gündüz, B. (2017). Controlling the optical properties of polyaniline doped by boric acid particles by changing their doping agent and initiator concentration. Applied Surface Science, 424, 345-351. Doi: 10.1016/j.apsusc.2017.03.010



- Cabuk, M., Alan, Y., Ünal, H.I. (2017). Enhanced electrokinetic properties and antimicrobial activities of biodegradable chitosan/organo-bentonite composites. *Carbohydrate Polymers*, 161, 71-81., Doi: 10.1016/j.carbpol.2016.12.067
- Cabuk, M. (2017). Electrorheological response of mesoporous expanded perlite particles. *Microporous and Mesoporous Materials*, 247, 60-65., Doi: 10.1016/j.micromeso.2017.03.044
- Cabuk, M., Yavuz, M., Ünal, H.I., Alan, Y. (2015). Synthesis characterization and enhanced antibacterial activity of chitosan based biodegradable conducting graft copolymers. *Polymer Composites*, 36(3), 497-509., Doi: 10.1002/pc.22965
- Cabuk, M., Alan, Y. Yavuz, M., Ünal, H.I. (2014). Synthesis characterization and antimicrobial activity of biodegradable conducting polypyrrole graft chitosan copolymer. *Applied Surface Science*, 318, 168-175., Doi: 10.1016/j.apsusc.2014.02.180
- Cabuk, M., Ucar Cabuk, F., (2017). Investigation of Efficiency of The TÜBİTAK 4004 Project Entitled “I Protect The Environment with **Green Chemistry**” on Preschool Children’s Knowledge Level about The Environment. *Dumlupınar University journal of Education Sciences Institute*, 1(1), 64-74.

Collaborations:

- Isparta University of Applied Sciences (Turkey), Süleyman Demirel University (Turkey), Gazi University (Turkey), Muş Alparslan University (Turkey), Turgut Özal University (Turkey), Inha University (South Korea).
- The Scientific and Technological Research Council of Turkey (TÜBİTAK).

Facilities:

- Synthesis of polymer and composite materials and their characterization (FTIR, SEM-EDS, TEM, TGA, XRD, DLS).
- Modification of natural polymers (chitosan, cellulose etc.)
- Electrorheometer (shear rate, viscosity, yield stress, viscoelastic deformation etc.).
- Zeta Sizer (zeta potential, particle size, surface charge).
- Preparation of green composites with polymers and clays.