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THE EFFECT OF COLEMANITE FILLER ON THE THERMODYNAMIC PROPERTIES OF POLYPROPYLENE

Tülin Şahin [1], Şenol Şahin [1], Ece Cengiz Yücel [2]
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Fillers are used to improve the mechanical properties of thermoplastics (such as the strength, rigidity, durability and hardness) $CaCO_3$, talc, wollastonite, mica, silica and kaolin are the most common inorganic fillers used to modify the properties of plastics. Studies of these fillers are relatively well known. A concentrated boron product as colemanite, which is different filler material, has not been used up until now. The purpose of this study is to investigate the thermal properties of polypropylene reinforced with colemanite particles. A Polypropylene Homopolymer (PPH) material produced as granular and natural color as main polymer was used. The admixture which used in this study was prepared by adding colemanite (calcium borate) mineral substance which of average particle size in granular is 20.6 μm to the natural material. The colemanite percentages were 5%, 7,5%, 10%, 15% and 20% by weight. Differential Scanning Calorimetry and Termomechanical Analysis tests were used. Filling with colemanite didn't affect the thermal stability of the materials. Increasing colemanite amount made no change in softening temperature and melting temperature. The crystallization degree was decreased for materials above 7.5% colemanite amounts comparing to resin material. The decrease was stable after 10%. The thermal expansion coefficients were increased until 10% colemanite amount but the coefficients for greater amounts were decreased due to mechanical interlocking.

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PMO SESSION 4
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PMO039
PREPARATION OF LEAD-FREE POTASSIUM SODIUM NIOBATE BASED PIEZOELECTRICS AND THEIR ELECTROMECHANICAL CHARACTERISTICS
Ebru Menşur-Alkoy [1], Ayşe Berksoy [2]
Maltepe University Faculty of Engineering Istanbul-Turkey [1] Gebze Institute of Technology Faculty of Engineering Istanbul-Turkey [2]

PMO040
THE EFFECT OF COLEMANITE FILLER ON THE THERMODYNAMIC PROPERTIES OF POLYPROPYLENE
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PMO045
PEROVSKITE BASED ANODE MATERIALS FOR SOLID OXIDE FUEL CELL APPLICATION: A REVIEW
Ismet Zakia Rahman [1], Mohsin Ali Raza [1], Md. Abdur Rahman [2]
University of Limerick Physics, Materials & Surface Science Institute Limerick-Ireland [1] University of Limerick Electronics & Computer Engineering Limerick-Ireland [2]

PMO047
STUDY OF NEW ECO-CORE METAL MATRIX COMPOSITE SANDWICH STRUCTURE
Zahurin Halim, Zuraida Ahmad, Noorasikin Samat, Hazleen Anuar
IIUM Mfg & Materials Eng Kuala Lumpur-Malaysia

PMO050
THREADING ON HIGH-PERFORMANCE IRON CASTING
Iñigo Elosegui [1], Luis Norberto López de Lacalle [1], Asier Fernández [1], Javier Fdez de Larrinoa [2]
University of the Basque country Mechanical engeneering Bilbao-Spain [1] Metal Estalki -Spain [2]

PMO052
ULTRA-MILD WEAR OF AL2O3 FIBRE AND PARTICLE REINFORCED MAGNESIUM MATRIX COMPOSITES
A. Banerji, H. Hu, A.T. Alpas
University of Windsor Department of Mechanical, Automotive & Materials Engineering Windsor-Canada

Jupiter - 10:00-12:00

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Chair: Derya Dişpınar
co-Chair: Henry Hu

FMO002
INFLUENCE OF AGING TREATMENT (T5) ON MECHANICAL PROPERTIES OF VACUUM HIGH PRESSURE DIE CAST ALUMINUM ALLOY A356
Xuezhi Zhang, Kazi Ahmmed, Henry Hu
University of Windsor Mechanical, Automotive and Materials Engineering Windsor-Canada

FMO011
STRIP CASTING OF ALUMINUM ALLOY USING A SINGLE ROLL CASTER EQUIPPED WITH A SCRAPER
Toshio Haga [1], Kazuya Akitsu [2], Keisuke Kamakura [3], Hisaki Watari [4]
Osaka Institute of Technology Mechaniacal Engineering Osaka-Japan [1] Osaka Institute of Technology Mechanical Engineering Osaka-Japan [2] Osaka Instiyute of Technology Mechanical Engineering Osaka-Japan [3] Gunma University Mechanical Engineering Kiryu-Japan [4]

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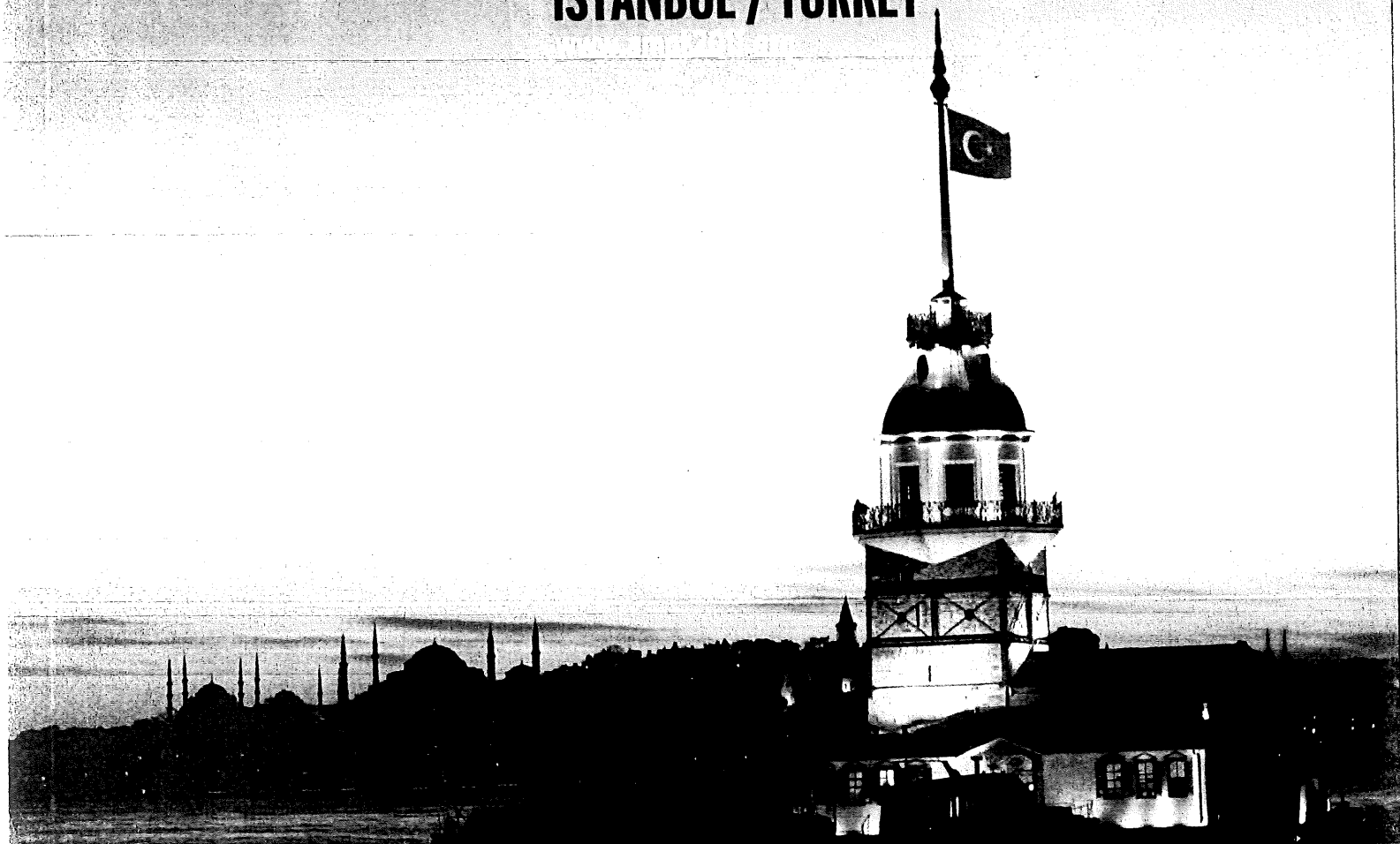

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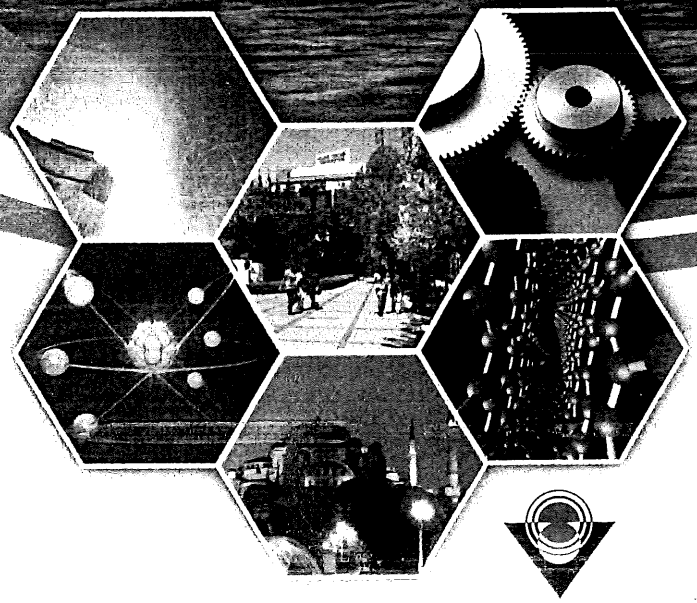

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