

CORNET Call for Proposals: International Collective Research
--- Project idea ---

Subject:	Carbonization Process as New Trend to Improve the Environmentally Friendly Wood Pellet Fuel Quality and Marketability
Coordinator: Other applicant(s):	Prof. Dr. Samir Afifi Kütahya Dumlupinar University, Advanced Technologies and Research Centre (İLTEM), Kutahya / TURKEY -
Sector:	<input type="checkbox"/> Materials <input checked="" type="checkbox"/> Process Engineering, Energy Technology and Environment <input type="checkbox"/> Business Management and Organisation <input type="checkbox"/> Construction and Production <input type="checkbox"/> Chemistry, Textile, Food, Health and Medical <input type="checkbox"/> Measurement and Information
Target group:	Wood pellet producers (SMEs)
Proposal summary:	<p>Wood energy is humanity's first fuel and continues to be an important source of energy. According to the UNECE, wood energy continues to be the leading renewable energy source in Europe, accounting for about 45 % of primary energy from renewable sources. Wood pellets is considered the modern and more efficient way of traditional firewood, virtue of their efficient combustion, convenience, and the fact that they are more energy dense. The manufacture and development of wood pellets has provided market options for what had been low value residual wood products.</p> <p>Modeling and optimization of the manufacturing process and technology development including high degree of specialization, automation, high heating efficiency and little smoke emission of the wood pellet yet acquires high attention.</p> <p>Carbonization of wood pellet process is seen as the new trend in the fuel market, carbonized wood pellets in comparison with not carbonized one has several advantages including: no need to upgrade coal boiler, it has higher energy density and burning efficiency and can retain 90 % of original biomass energy. The heat value of carbonized biomass fuel is 1.5 times than that of normal wood pellets. It is more convenient to store and transport.</p> <p>Adoption of carbonized wood pellets can improve the marketability of the normal wood pellet and reduce the use of fossil fuel. This will lower the greenhouse gas emission and promote environment protection.</p> <p>However, the carbonized wood pellets still have some technical (immature</p>

	<p>production technology) and socio-economical (cost and adaption) barriers which limited the manufacturing process transfer.</p> <p>Our objectives are to:</p> <ul style="list-style-type: none"> - Improve the technical capacity and the capability of Small Enterprises in the area of wood pellets production industry - Establish cooperation between Kütahya Dumlupinar University (DPU) as a RTO in Turkey with national and international SMEs - Contribute to improve the immature production technology of carbonized wood pellets industry which haven't been fully developed - Increase the marketability of the advanced developed wood pellets
<p>Advantages for trade and industry:</p>	<p>Development and improvement of the existing Wood Pellet characteristics as Environmentally Friendly Fuel through making use of regional experience transfer of carbonization process as new trend technical approach which will be reflected positively on the marketability of existing products and environmental protection.</p>
<p>Dissemination concepts:</p>	
<p>Profile of additional partners:</p>	<p>We are looking for Wood pellet producers (SMEs) that are eager to update their pellet production to better quality, and distributors for our developed product.</p>
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