
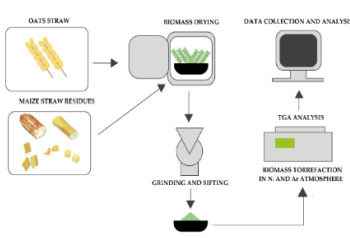




POLISH NATIONAL AGENCY
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<p>name of the unit:</p> <p style="text-align: center;">DEPARTMENT OF SAFEWORK ENGINEERING</p> <p style="text-align: center;">Lodz Univeristy of Technology</p>		<p>symbol:</p> <p style="text-align: center;">K-91</p> <p style="text-align: center;">http://www.wipos.p.lodz.pl</p>
<p>head of the unit:</p> <p style="text-align: center;">Prof. Grzegorz Wielgosiński, Ph.D., D.Sc.</p>	<p>potential promoters:</p> <p style="text-align: center;">Prof. Grzegorz Wielgosiński, Ph.D., D.Sc. Sławomir Kuberski Ph.D., D.Sc., TUL Prof. - material engineering</p>	<p>contact person:</p> <p style="text-align: center;">Prof. Grzegorz Wielgosiński, Ph.D., D.Sc. tel: 42-631-37-95 grzegorz.wielgosiński@p.lodz.pl</p>
<p>scope of activities:</p> <ul style="list-style-type: none"> • Thermal treatment of municipal, industrial, medical and veterinary waste as well as sewage sludge and RDF alternative fuel • Research on flue gas cleaning methods: dry flue gas desulphurization method, selective non-catalytic reduction of nitrogen oxides (SNCR) method, selective catalytic reduction of nitrogen oxides (SCR) method, reduction of polychlorinated dibenzo-p-dioxin (PCDDs) emissions and polychlorinated dibenzofurans (PCDFs) • Analysis of the biomass torrefaction process • Analysis of changes in the state of air pollution in Poland • Identification of the mechanism of winter and summer smog formation 		<p>graphic material</p> 
<p>present activities:</p> <ul style="list-style-type: none"> • Measurements of VOC and ammonia sums from combustion of coal and biomass • Measurements of VOC and ammonia emissions from biomass torrefaction processes • Measurements of pollutant emissions from the RDF storage and combustion process • Modeling the processes of catalytic and non-catalytic reduction of nitrogen oxides • Determination of the kinetics of torrefaction reactions of various types of biomass and determination of the use of the resulting torrefaction • Determination of the dependence of the concentration of pollutants and meteorological parameters in the smog generation process 		
<p>Future activities:</p> <p>Continuing current research activities.</p>		
<p>Publications/patents, awards, projects:</p> <p>Publications:</p> <ul style="list-style-type: none"> • Wielgosiński G., Czerwińska J., Smog episodes in Poland, Atmosphere, 2020, 11, 277. • Czerwińska J., Wielgosiński G., Functioning of the flue gas treatment system in Polish municipal waste incineration plants, Scientific Review – Engineering and Environmental Sciences, 2020, 29 (1), 108 – 119. • Wielgosiński G., Czerwińska J., Szymańska O., Bujak J., Simultaneous NOx and Dioxin Removal in the SNCR Process, Sustainability, 2020, 12, 5766. • Szufa S., Wielgosiński G., Piersa P., Czerwińska J., Dzikuć M., Adrian Ł., Lewandowska W., Marczak M., Torrefaction of Straw from Oats and Maize for use as a fuel and additive to organic fertilizers – TGA analysis, kinetics as products for agricultural purposes, Energies, 2020, 13, 2064. <p>Patents:</p>		



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- Sposób jednoczesnego usuwania tlenków azotu (NO_x) oraz polichlorowanych dibenzo-p-dioksyn i polichlorowanych dibenzofuranów (PCDD/Fs) z gazów odlotowych, w szczególności pochodzących z procesów spalania. P 432272

Projects:

- Opracowanie technologii katalitycznego ograniczenia emisji tlenków azotu (NO_x) oraz polichlorowanych dibenzo-p-dioksyn (PCDDs) i polichlorowanych dibenzofuranów (PCDFs) nr POIR.02.03.02-04-0020/16-00.
- Nowoczesna technologia torrefikacji biomasy do produkcji blendów paliwowych, biowęgla jako dodatku do nawozów oraz węgla aktywnego dla potrzeb energetyki, rolnictwa, budownictwa i przemysłu chemicznego. NCBR 2014-2020, nr grantu 0155/L-9/2017.

Keywords:

thermal waste treatment, torrefaction, air quality, Polish smog

List of internship proposal in this research team:

Topics related to the given scope of research work in line with the interests of the doctoral student