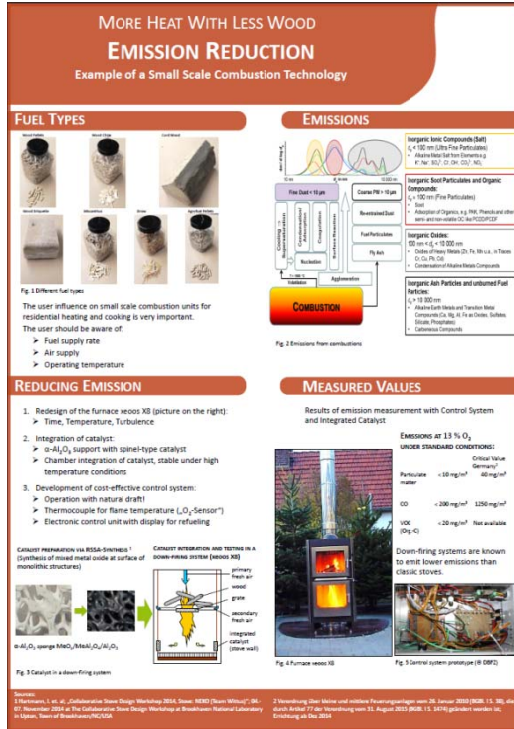


ETE EmTechEngineering GmbH präsentiert neu entwickelten Katalysator auf der UNECE/FAO Forestry and Timber Section-Veranstaltung „More Heat With Less Wood“ im Palast der Nationen der UN in Genf



MORE HEAT WITH LESS WOOD
EMISSION REDUCTION
Example of a Small Scale Combustion Technology

FUEL TYPES
The user influence on small scale combustion units for residential heating and cooking is very important. The user should be aware of:
 > Fuel supply rate
 > Air supply
 > Operating temperature

EMISSIONS
 Inorganic Acid Compounds (IAC)
 SO_2 (Sulphur Dioxide)
 NO_2 (Nitrogen Dioxide)
 HCl (Hydrogen Chloride)
 HF (Hydrogen Fluoride)
 Inorganic Carbon Compounds (IC)
 CO (Carbon Monoxide)
 CO_2 (Carbon Dioxide)
 CH_4 (Methane)
 C_2H_6 (Ethane)
 C_3H_8 (Propane)
 C_4H_{10} (Butane)
 C_5H_{12} (Pentane)
 C_6H_{14} (Hexane)
 C_7H_{16} (Heptane)
 C_8H_{18} (Octane)
 C_9H_{20} (Nonane)
 $C_{10}H_{22}$ (Decane)
 $C_{11}H_{24}$ (Undecane)
 $C_{12}H_{26}$ (Dodecane)
 $C_{13}H_{28}$ (Tridecane)
 $C_{14}H_{30}$ (Tetradecane)
 $C_{15}H_{32}$ (Pentadecane)
 $C_{16}H_{34}$ (Hexadecane)
 $C_{17}H_{36}$ (Heptadecane)
 $C_{18}H_{38}$ (Octadecane)
 $C_{19}H_{40}$ (Nonadecane)
 $C_{20}H_{42}$ (Eicosane)
 $C_{21}H_{44}$ (Heneicosane)
 $C_{22}H_{46}$ (Docosane)
 $C_{23}H_{48}$ (tricosane)
 $C_{24}H_{50}$ (tetracosane)
 $C_{25}H_{52}$ (pentacosane)
 $C_{26}H_{54}$ (hexacosane)
 $C_{27}H_{56}$ (heptacosane)
 $C_{28}H_{58}$ (octacosane)
 $C_{29}H_{60}$ (nonacosane)
 $C_{30}H_{62}$ (triacontane)
 $C_{31}H_{64}$ (hentriacontane)
 $C_{32}H_{66}$ (dotriacontane)
 $C_{33}H_{68}$ (tritriacontane)
 $C_{34}H_{70}$ (tetratriacontane)
 $C_{35}H_{72}$ (pentatriacontane)
 $C_{36}H_{74}$ (hexatriacontane)
 $C_{37}H_{76}$ (heptatriacontane)
 $C_{38}H_{78}$ (octatriacontane)
 $C_{39}H_{80}$ (nonatriacontane)
 $C_{40}H_{82}$ (triacontane)
 $C_{41}H_{84}$ (hentriacontane)
 $C_{42}H_{86}$ (dotriacontane)
 $C_{43}H_{88}$ (tritriacontane)
 $C_{44}H_{90}$ (tetratriacontane)
 $C_{45}H_{92}$ (pentatriacontane)
 $C_{46}H_{94}$ (hexatriacontane)
 $C_{47}H_{96}$ (heptatriacontane)
 $C_{48}H_{98}$ (octatriacontane)
 $C_{49}H_{100}$ (nonatriacontane)
 $C_{50}H_{102}$ (triacontane)
 $C_{51}H_{104}$ (hentriacontane)
 $C_{52}H_{106}$ (dotriacontane)
 $C_{53}H_{108}$ (tritriacontane)
 $C_{54}H_{110}$ (tetratriacontane)
 $C_{55}H_{112}$ (pentatriacontane)
 $C_{56}H_{114}$ (hexatriacontane)
 $C_{57}H_{116}$ (heptatriacontane)
 $C_{58}H_{118}$ (octatriacontane)
 $C_{59}H_{120}$ (nonatriacontane)
 $C_{60}H_{122}$ (triacontane)
 $C_{61}H_{124}$ (hentriacontane)
 $C_{62}H_{126}$ (dotriacontane)
 $C_{63}H_{128}$ (tritriacontane)
 $C_{64}H_{130}$ (tetratriacontane)
 $C_{65}H_{132}$ (pentatriacontane)
 $C_{66}H_{134}$ (hexatriacontane)
 $C_{67}H_{136}$ (heptatriacontane)
 $C_{68}H_{138}$ (octatriacontane)
 $C_{69}H_{140}$ (nonatriacontane)
 $C_{70}H_{142}$ (triacontane)
 $C_{71}H_{144}$ (hentriacontane)
 $C_{72}H_{146}$ (dotriacontane)
 $C_{73}H_{148}$ (tritriacontane)
 $C_{74}H_{150}$ (tetratriacontane)
 $C_{75}H_{152}$ (pentatriacontane)
 $C_{76}H_{154}$ (hexatriacontane)
 $C_{77}H_{156}$ (heptatriacontane)
 $C_{78}H_{158}$ (octatriacontane)
 $C_{79}H_{160}$ (nonatriacontane)
 $C_{80}H_{162}$ (triacontane)
 $C_{81}H_{164}$ (hentriacontane)
 $C_{82}H_{166}$ (dotriacontane)
 $C_{83}H_{168}$ (tritriacontane)
 $C_{84}H_{170}$ (tetratriacontane)
 $C_{85}H_{172}$ (pentatriacontane)
 $C_{86}H_{174}$ (hexatriacontane)
 $C_{87}H_{176}$ (heptatriacontane)
 $C_{88}H_{178}$ (octatriacontane)
 $C_{89}H_{180}$ (nonatriacontane)
 $C_{90}H_{182}$ (triacontane)
 $C_{91}H_{184}$ (hentriacontane)
 $C_{92}H_{186}$ (dotriacontane)
 $C_{93}H_{188}$ (tritriacontane)
 $C_{94}H_{190}$ (tetratriacontane)
 $C_{95}H_{192}$ (pentatriacontane)
 $C_{96}H_{194}$ (hexatriacontane)
 $C_{97}H_{196}$ (heptatriacontane)
 $C_{98}H_{198}$ (octatriacontane)
 $C_{99}H_{200}$ (nonatriacontane)
 $C_{100}H_{202}$ (triacontane)

REDUCING EMISSION
 1. Redesign of the furnace ecoo XB (picture on the right):
 > Time, Temperature, Turbulence
 2. Integration of catalyst:
 > , support with silver-type catalyst
 > Chamber integration of catalyst, stable under high temperature conditions
 3. Development of cost-effective control system:
 > Operation with nature draft
 > Thermocouple for flame temperature (-Sensor)
 > Electronic control unit with display for refueling

MEASURED VALUES
 Results of emission measurement with Control System and Integrated Catalyst
 EMISSIONS at 15 %
 UNCEC STANDARD CONDITIONS:
 Particulate <math>< 10</math> mg/m³ Critical Value Germany/ Austria
 CO <math>< 100</math> mg/m³ 1250 mg/m³
 VOC <math>< 20</math> mg/m³ Not available (Dq-C)
 Down-firing systems are known to emit lower emissions than classic stoves.

Quelle der Bilder: Frank Helbig, 2015



UNECE Food and Agriculture Organization of the United Nations
Forestry and Timber Section

MORE HEAT WITH LESS WOOD

What are the best practices to provide healthy, affordable and resource efficient wood energy?

EXHIBITION
 29 Sept – 9 Oct 2015
 La Passerelle
 Palais des Nations, Geneva

WORKSHOP
 6 – 7 Oct 2015
 Room XXIII
 Palais des Nations, Geneva

Listen to experiences from the field
 Understand wood energy for households in:
 The Balkans – Eastern Europe – Central Asia

C.A.R.M.E.N., DBFZ, GfNR



Auf dem von der UNECE/FAO Forestry and Timber Section veranstalteten Workshop wird der neu entwickelte Katalysator für Hochtemperaturbedingungen zur Brennraumintegration während der Ausstellung „More Heat With Less Wood“ vom 29.09.15 bis zum 09.10.15, den Delegierten der UN im Palast der Nationen in Genf vorgestellt.

Der mit finanzieller Unterstützung der Deutschen Bundesstiftung Umwelt (DBU) entwickelte Oxidationskatalysator stellt eine weltweite Neuerung in der Minderung von Emissionen aus Biomassefeuerungen dar und wird in einem der emissionsärmsten Kaminöfen präsentiert.

Aufgrund der zum Patent angemeldeten Entwicklung kann der Katalysator CO-Emissionen um bis zu 80 % senken und durch Totaloxidation auch hervorragende Minderungsgrade bei flüchtigen organischen Verbindungen und Ruß erreichen.

Mit Stolz möchten wir unsere Kunden und Interessenten über diese ehrenvolle Beteiligung an der Ausstellung informieren.

Details zu der Veranstaltung finden Sie unter dem folgenden Link:

<http://www.unece.org/forests/moreheat2015.html#/>