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CHLORIDE FILM SEPARATION IN GARBAGE AGAINST DIOXIN

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Abstract – This system already has Japanese Patent Application 2000-159699 using the blue light absorption and JPA2001-393262 using the thermal impedance for the chloride film detection in the garbage. We, human being have the three big ecological problems. The first is the nuclear waste in the northern part of the Japan Sea, the second is the irregular weather that will be less oxygen caused by carbon fuels and the third is Dioxins caused by the incineration of the chloride film and garbage.

The first and the second will be solved by the investment and stopping cars. The third is required for development of a automatic chloride film detector of the treatment for waste garbage plastics that is Sanuki RDF System against Dioxins. The first method is detecting the plastisizer in the chloride films of garbage and is not suitable for heated films by the wicro wave cooker. The plasticizer will go into the cooked food. The second thermal impedance method detects PVDC, PVC, heated PVDC, heated PVC and non chloride films.

Keywords: blue light absoption, thermal impedance and dioxins

1. INTRODUCTION

One of the authors already developed PCI (pulverized coal injection system) in 1982 shown in [1]. PCI has been used for teen set of novel blast furnaces in the World and it is very useful for RPF (refuse plastics fuel) or RDF (refuse derived fuel) in order to recycle the resources.

The authors developed a optical detector for PVDC ({-C2H2Cl2-}n}) and PVC ({-C2H3Cl-}n) rejection method shown in [2] for Sanuki RDF system against Dioxins.

The authors think that we should compensate our developed control system for our ecology in the World against Dioxins.

2. PAST EFFORTS

Figure 1 shows Sanuki RDF system. The system requires the chloride film detector of the garbage compost reactor for the left upper figure of Figure 1. The right upper figure shows RPF making process for cement kilns and blast furnaces for reducing chlorinated films. The lower figure shows RDF making and burning process. Reducing Dioxins in the fly ash in the burning process is the most important by reducing chloride film in RDF.

Chloride films are very useful for oxygen barrier for raw meet wrapping but are not useful for Dioxins making in garbage incinerators. Then they must be rejected using garbage compost fermentars or suitable chloride film detectors.

3. CHLORIDE FILM DETECTOR USING BLUE LIGHT ABSORPTION

Figure 2 shows the patent application of this system.. Figure 3 and 4 show the relation between the light wave length and the light intensity of the film reflection light and the relation between the normalized light intensity and number of pixels on the film are obtained by two dimensional FFT of Nexus' New Qub. The detected films are 10□20 μm new PVDC, PVC and non-chloride films. Sampling area of the test film is 15mmφfor the reflection light of the surface of the film on the black plate. The reflection light based on the film passing light using a white light and 1 or 7 E1L51-3 LED (blue or violet).Figure 5 to 7 in the next page show the three or five minutes heated films and plasticizer coated films. Figure2 JPA 2000 - 159699

4. EFFORTS ON FILM DETECTOR USING THERMAL IMPEDANCE

Figure 5, 6 and 7 show in the next page and show the three or five heated films using the micro wave cooker and the plasicizer coated films. Figure 8 shows the chloride films detector using the thermal impedance. (1) shows 150 W white light or infra red light, (2) □shows the test film and (3) shows the infra red detector NEC Sanei's TH103 Thermo-tracer or Yokogawa's 530-02 Emission thermometer. Figure 9 show the application of JPA 2001-393262. (1) shows the white light or infra red light. (2) and (3) show non chloride film and the test film. (4) and (5) shows the bottom temperature of the films. (6) shows the difference of (4) and (5). (7) shows the temperature alarm of (6). (8) shows the derivative of (9). (9) shows the alarm of (8).□Figure 10 shows the relation between the time and the temperature for PVDC, PVC, the three minutes heated PVDC, the three minutes heated PVC and PE. The authors are found out the thermal impedance depending on the contents of the chlorine in the films and it is detected for the micro wave cooked film.s.

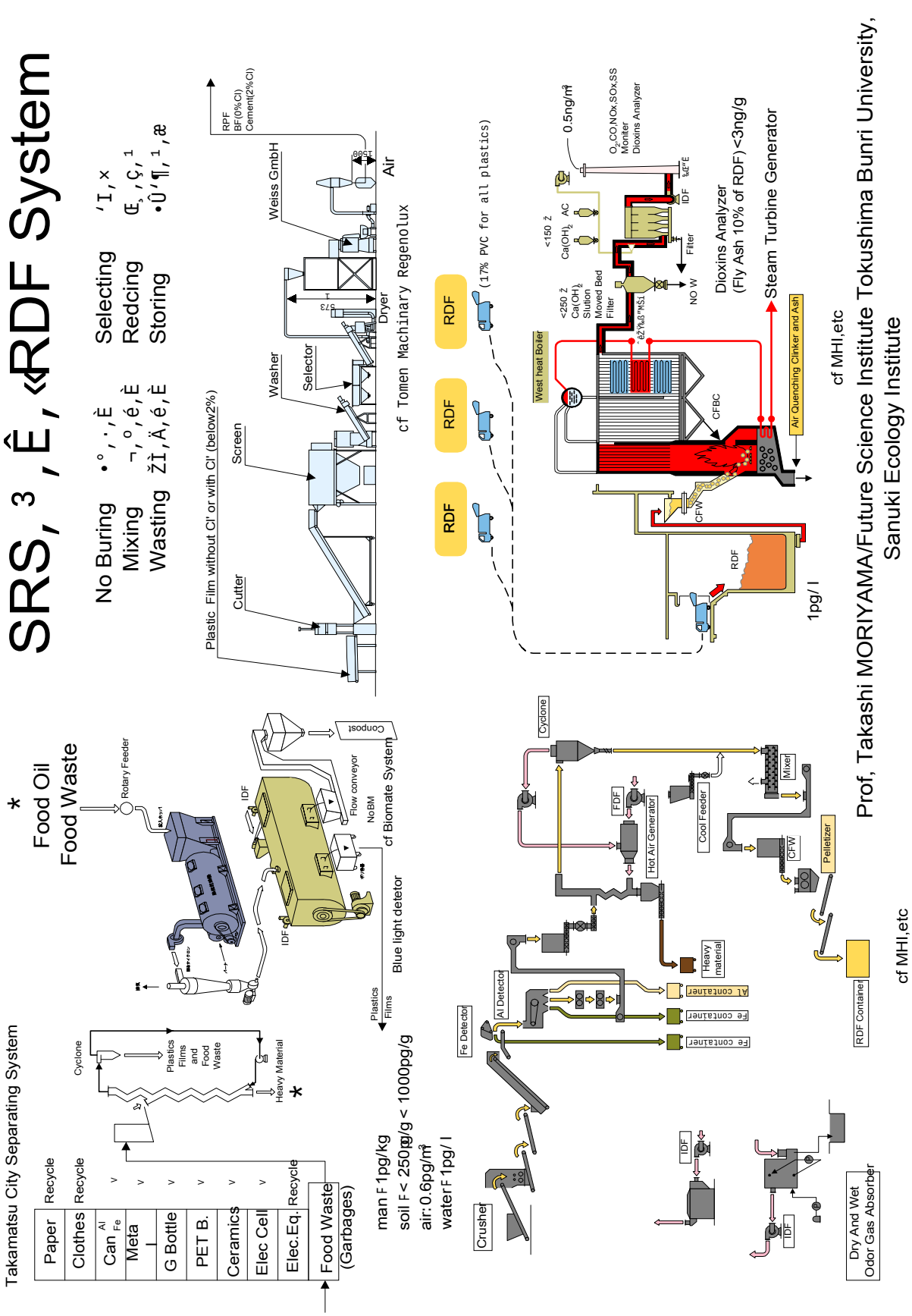


Fig 1. Sanuki RDF system against Dioxins

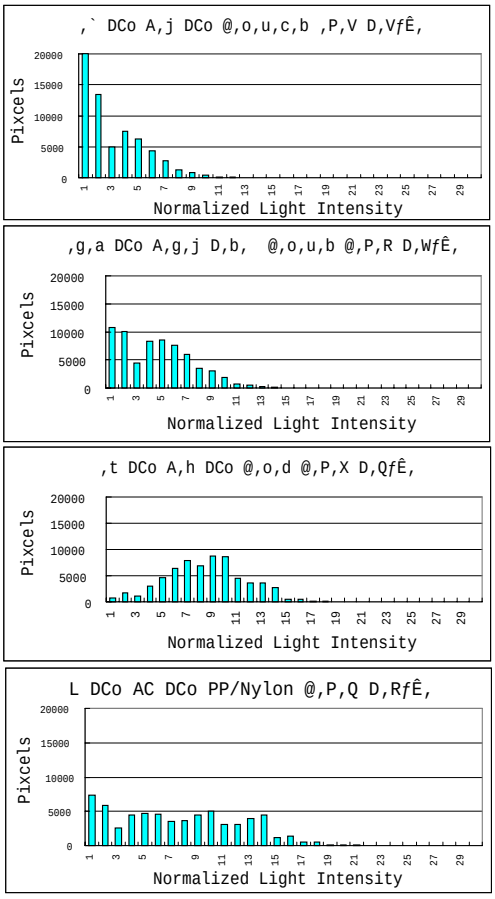


Fig 3. Relation between light intensity and pixels for 300W (770lx) reflecting white light for CCD blue light

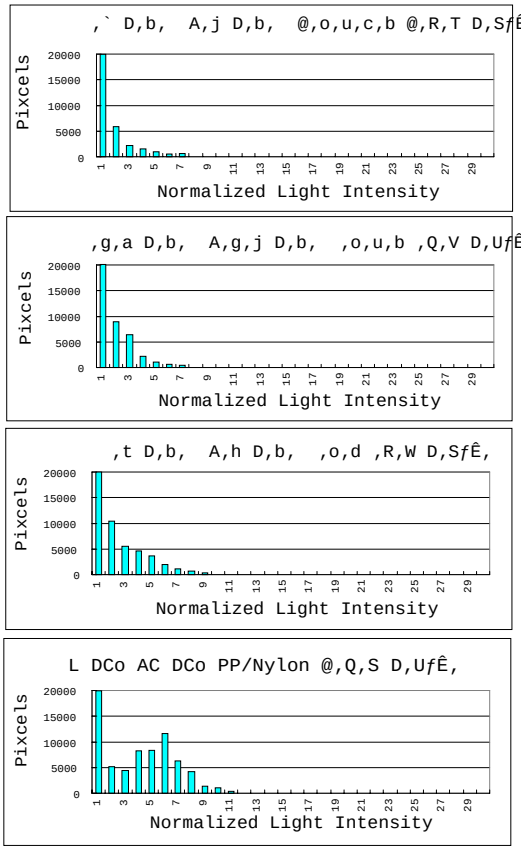


Fig 4. Relation between light intensity and pixels for seven blue LED (630lx)

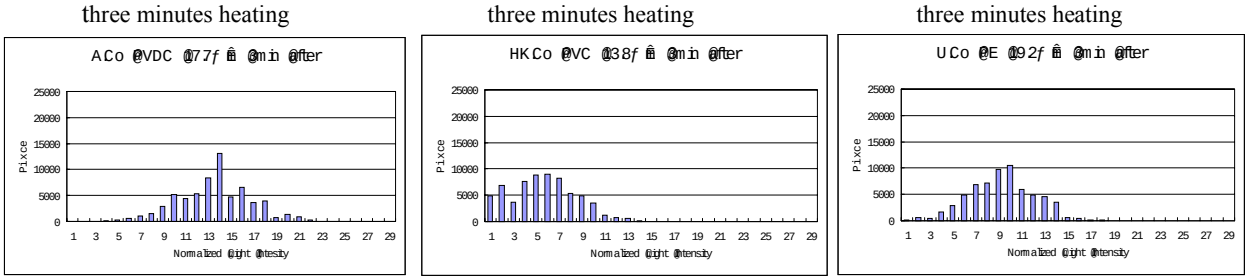


Figure 5..Relation between light intensity and pixels for 300W reflecting white light for CCD blue light for below three minutes heated films

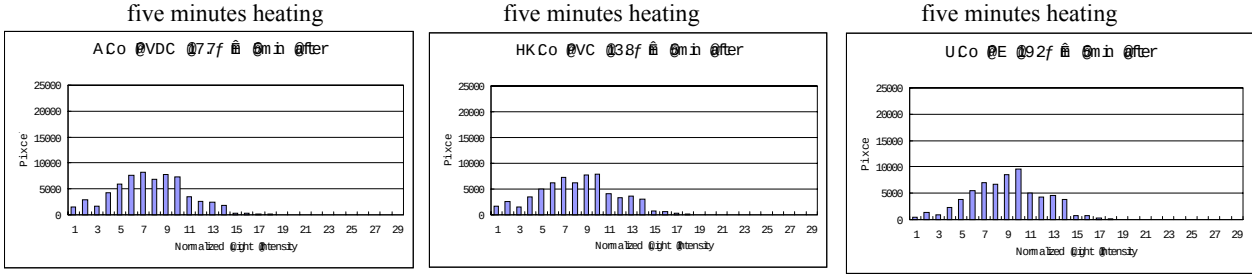


Figure 6. Relation between light intensity and pixels for 300W reflecting white light for CCD blue light for above five minutes heatiedfilms

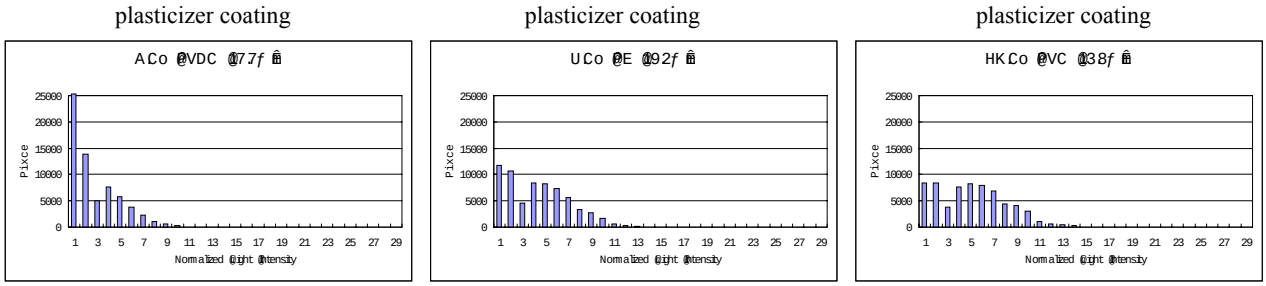


Figure 7. Relation between light intensity and pixels for 300W reflecting white light for CCD blue light for plasticizer coating films

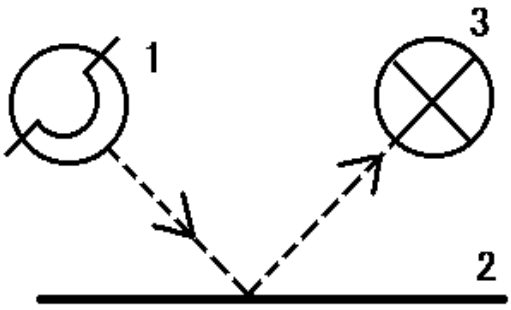
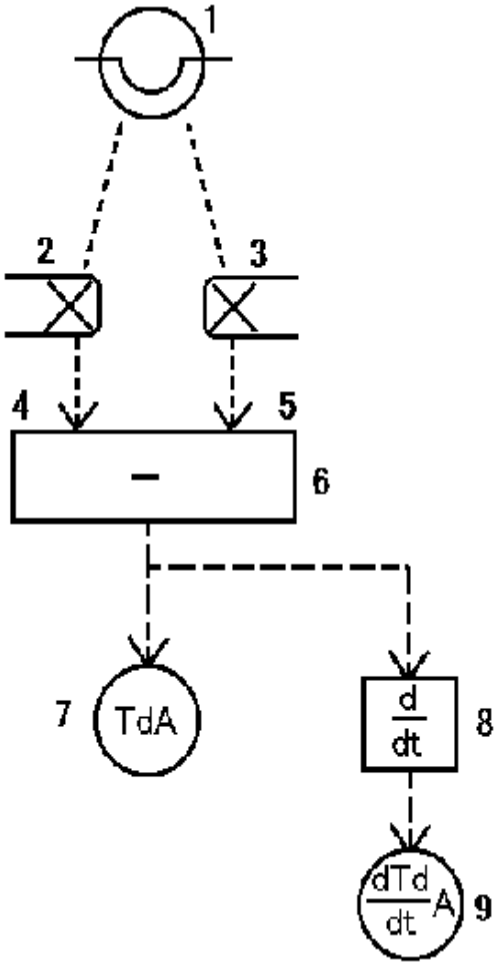


Figure 8. JPA 2001-393262



Fiure 9 Application of the JPA

5. CONCLUSIONS

5.1 Figure 3 and Figure 4 show PVDC and PVC films have the strong reduced light intensity for the blue light.

5.2 Figure 5 to 7 show the plasticier in chloride films reduce UV and blue light. The plasicizer will go to the cooked food as a genetic malignity agent.

5.3 Figure 10 shows the thermal impedance detects PVDC, PVC, heated PVDC, heated PVC, based on the contents of chlorine in the wrapping films in garbage. The relation between the temperature and time is linear for the time. The relation between the temperature and the time is linear in the time range.

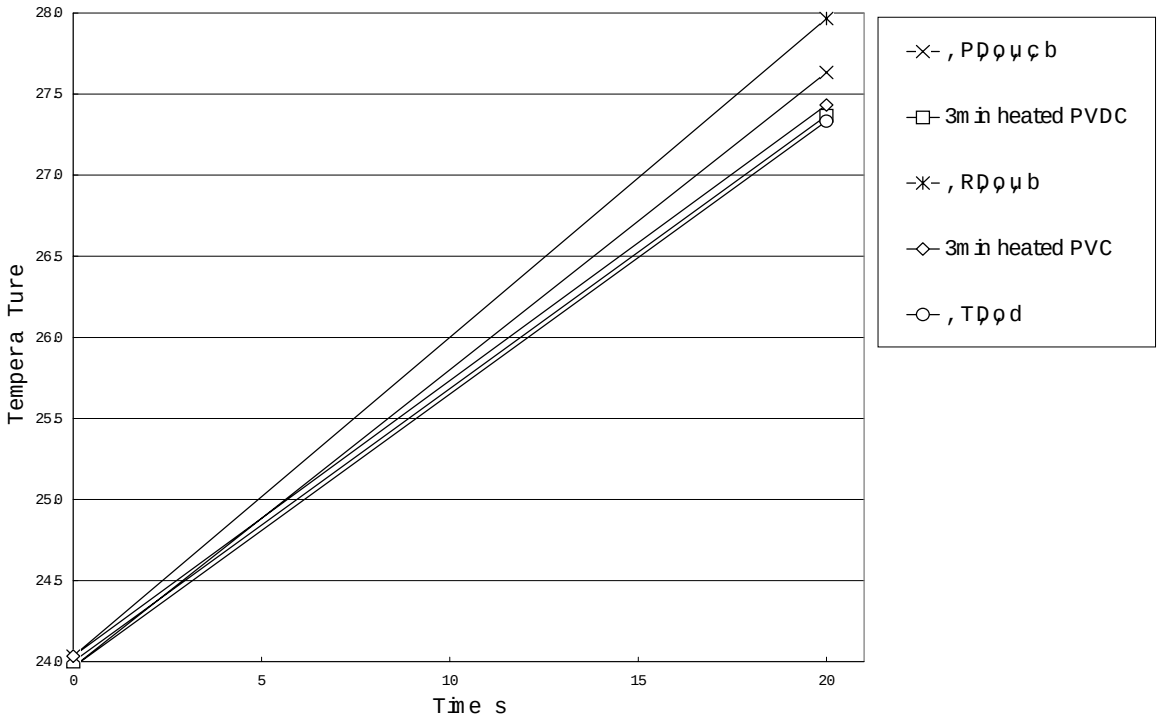


Figure10 Relation between time and temperature of films using 150W white light and NEC Sanei's TH103 themo tracerr.

6. FUTURE STUDY AND FORECASTS

6.1 The reformed film made of the exhaust films of the garbage compost fermentars will be test by the method using a sample film making machine after cleaning and film making

6.2 RPF will be qualified by the chlorine contents based on this blue light detector using above-mentioned machine before and/or after RPF making. The cement kilns and the blast furnaces will uses RPF (56 % of PCI 9 million t/y) and control Dioxins using GC mass spectorometer.

6.3 The automatic detector will be successful using JPA 2001-393262 using the thermal impedance.

The stree and strain diagrams will detect the chloride films. JPA 2002-

6.4 PVDC and PVC should be controlled by the government policy using yellow marker as the future studys. The customers should be procure non chloride films in Nokyou Coap. O-bento and Katokichi is successful for non chloride films.

6.5 Naoshima incinerators for the industrial irregular barbage at Teshima Including Dioxins will not be successful for Diokins maked on the inside surface of the exhaust ducts and stacks.

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