

Author/s	Date	Institution	Title	Reference type	Journal Details	publisher	Copy available (y/n)	name of copy	Abstract
Marsh, R., Griffiths, A.J., Williams, K.P., Evans, S.L.,	2006	CSE	Degradation of recycled polyethylene film materials due to contamination encountered in the products' life cycle	Journal	Proceedings of the Institution of Mechanical Engineers, Part C: <i>Journal of Mechanical Engineering Science</i> , 220 (5), pp. 593-602.	Institution of Mechanical Engineers.			The recycling of polyethylene film is a straightforward process provided the material that is being recycled has come from a clean source and is consistent in composition. Most waste film recovered for recycling has been subjected to a series of "life cycle factors" e.g. co-mingling with wastes such as dirt, packaging tapes and other plastic film products. Such contamination can degrade the material's physical properties and this paper presents quantitative data on the effects of contaminants on polyethylene films. Results suggest that dirt contamination can adversely affect the elasticity and melt viscosity of the polymer, but the contaminant does not interact directly with it and that polypropylene-based packaging tape is more suited to mechanical recycling than Polyvinyl Chloride or cellulose based tapes.
Marsh, R., Griffiths, A.J., Williams, K.P., Evans, S.L.,	2006	CSE	Thermal degradation of polyethylene film materials due to successive recycling	Journal	Proceedings of the Institution of Mechanical Engineers, Part C: <i>Journal of Mechanical Engineering Science</i> , 220 (8), pp.1099-1108.	Institution of Mechanical Engineers			Mechanical recycling of plastic film involves subjecting plastic materials to a series of heat cycles that can potentially degrade the material, causing brittleness and increased melt viscosity. Plastic film recycling in the UK is in its infancy, in need of an increased understanding of how the physical properties of polymeric materials change before and during the process. Reliable data is required to estimate the behaviour of such film products when recycled. Measurements were made as to the changes in physical properties of four different varieties of polyethylene film products when subjected to a series of successive simulated heat cycles and evaluated after each step. Results showed that although changes in tensile properties were fairly small, changes in processing properties such as melt flow index for highly-branched or low density polyethylenes are substantial and could be a concern during recycling operations.
Marsh, R., Griffiths, A.J., Williams, K.P., Wilcox, S.J.,	2007	CSE	Physical and Thermal properties of extruded Refuse Derived Fuel	Journal	<i>Fuel Processing Technology</i> , 88 (7), pp.701-706	Elsevier			This paper is concerned with the production and properties of fuel pellets for use in energy from waste technologies. The analysis conducted was performed using feedstocks made up of residues from a range of Mechanical Biological Treatment plants. Such plants are likely to be utilised as future waste solutions in order for the UK to meet challenging EU solid waste treatment targets. Two major themes were examined, these were the physical and thermal characteristics of the extruded fuel pellets. This was further investigated in the context of the parameters required during production and the properties of the extruded product. Pelletised fuel was produced using a laboratory-scale ram-driven extruder. Analysis of the produced pellets was undertaken by testing the compressive strengths in a tensile testing machine. Devolatilisation characteristics were measured in an inert atmosphere in an electric vertical tube furnace and mass balance. Results showed that resultant pellet compressive strength was not influenced significantly by extrusion conditions. Analysis of the pellets in a high-temperature environment highlighted that there was evidence of several components devolatilising at ~280°C and ~420°C and that little of the sample was left post devolatilisation. The study indicated that heating
Iibas, M., Crayford, A., Yilmaz, I., Bowen, P.J., Syred, N.,	14th February 2006	CSE	Laminar-burning velocities of hydrogen-air and hydrogen-methane-air mixtures: An experimental study	Journal paper	<i>International Journal of Hydrogen Energy</i> , 31 pp.1768 – 1779	Elsevier	Y	pubACJournal0206hydrogen.pdf	The laminar burning velocities of hydrogen-air and hydrogen-methane-air mixtures are very important in designing and predicting the progress of combustion and performance of combustion systems where hydrogen is used as fuel. In this work, laminar flame velocities of hydrogen-air and different composition of hydrogen-methane-air mixtures (from 100% hydrogen to 100% methane) have been measured at ambient temperatures for variable equivalence ratios (ER = 0.8-3.2). A modified test rig has been developed from the former Cardiff University 'Cloud Chamber' for this experimental study. The rig comprises of a 250mm length cylindrical stainless steel explosion bomb enclosed at one end with a stainless steel plug which houses an internal stirrer to allow mixing. The other end is sealed with a 120mm diameter round quartz window. Optical access for flame propagation is afforded via two diametrically opposed quartz windows in both sides. Flame speeds are determined within the bomb using a high-speed Schlieren photographic technique. This method is an accurate way to determine the flame-speed and the burning velocities were then derived using a CHEMKIN computer model to provide the expansion ratio. The design of the test facility ensures the flame is laminar which results in a
Cleary, V.M., Bowen, P.J., Wilcox, H.W.M.,	2007	CSE	Flashing liquid jets and two-phase dispersion - I. Experiments for derivation of atomisation correlations.	Journal	<i>Journal of hazardous materials</i> , 142 (11) pp.786-796, ISSN: 0304-389				
Bowen, P.J., Wilcox, H.M., Harper, M., Cleary, V.,	2007	CSE	Flashing Liquid Jets and two-phase droplet dispersion I. Experiments for derivation of droplet atomisation correlations.	Journal	<i>Journal of Hazardous Materials</i> , 142 (3), pp.797-809, ISSN: 0304-3894				
Iibas, M., Crayford, A.P., Yilmaz, I., Bowen, P.J., Syred, N.,	2006	CSE	Laminar-burning velocities of hydrogen-air and hydrogen-methane-air mixtures: an experimental study	Journal	<i>International Journal of Hydrogen Energy</i> , 31 (12), pp.1768-1779, ISBN 0360-3199				
Heravi, H.M., Dawson, J.R., Bowen, P.J., Syred, N.,	2005	CSE	Primary pollutant prediction from integrated thermofluid-kinetic pulse-combustor models	Journal	<i>AIAA Journal of Propulsion and Power</i> , 21 (6), pp.1092-1097, ISSN 0748-4658				
Comer, M.A., Bowen, P.J., Sapsford, S.M., Kown, S.I.,	2004	CSE	A Parametric Sensitivity Study of GDI Spray Characteristics using a 3-D Transient Model	Journal	<i>International Journal of Automotive Technology</i> , 5 (3), pp.145-153, ISSN 1229 9138				
Marsh, R, Griffiths, A J, Williams, K P	2004	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal Paper	CIWM scientific and technical review. Volume 5, Issue 1 pp 2 – 10.				
Avramenko, A.A., Kobzar, S.G., Kuznetsov, A.V., Bowen, P.J.,	2003	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>International Journal of Applied Mechanics and Engineering</i> , 8 (4), ISSN 1425-1655				
Bowen, P.J.,		CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	Von Karman Institute for Fluid Mechanics (Belgium) Research Monograph Keynote Paper, ISSN 0377-8312				
Patzold, A., Stein, C., Nyeki, S., Gysel, M., Weingartner, E., Baltensperger, U., Giebl, H., Hitzinger, R., Döpelschauer, A., Vchoticky, S., Puxbaum, H., Johnson, M., Hurley, C.D., Marsh, R., Wilson, C.W.,	2003	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>GEOPHYSICAL RESEARCH LETTERS</i> , 30 (13) pp.1719, doi:10.1029/2003GL017283	American Geophysical Union			The particles emitted from an aircraft engine combustor were investigated in the European project PartEmiss. Measured aerosol properties were mass and number concentration, size distribution, mixing state, thermal stability of internally mixed particles, hygroscopicity, and cloud condensation nuclei (CCN) activation potential. The combustor operation conditions corresponded to modern and older engine gas path temperatures at cruise altitude, with fuel sulphur contents (FSC) of 50, 410, and 1270 mg g ⁻¹ . Operation conditions and FSC showed only a weak influence on the microphysical aerosol properties, except for hygroscopic and CCN properties. Particles of size D ₅₀ ~ 30 nm were almost entirely internally mixed. Particles of sizes D < 20 nm showed a considerable volume fraction of compounds that volatilise at 390 K (10–15%) and 573 K (4–10%), while respective fractions decreased to <5% for particles of size D ₅₀ ~ 50 nm.
Bowen, P.J.,	2003	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>The International Flame Research Foundation Online Combustion Handbook</i> , (2003) File No.233 ISSN 1607 9116				
Bowen, P.J.,	2003	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>The International Flame Research Foundation Online Combustion Handbook</i> , (2003) File No.186 ISSN 1607 9116				
Bowen, P.J.,	2003-200	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Von Karman Institute for Fluid Mechanics, Lecture Series</i> 2003-8, J-M Buchlin/ISSN 0377 8312				
Bowen, P.J.,	2003-200	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Von Karman Institute for Fluid Mechanics, Lecture Series</i> 2003-8, J-M Buchlin/ISSN 0377 8312				
Gruenberger, T.A., Bowen, P.J., Syred, N.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal Combustion Science and Technology</i> , 174 (5-6), pp.67-85, ISSN 0010-2202				

Khalatov, A., Syred, N., Smith, A., Bowen, P.J.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Industrial Heat Engineering (Ukraine)</i> , 24 (5), pp.23-33, ISSN 0204-3602				
Maragkos, A., Bowen, P.J.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Int. The Proceedings of the Combustion Institute</i> , 29, pp.305-311, ISSN 1540-7489				
Syred, N., Al-Ajmi, R., Bowen, P.J., Khalatov, A.A.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Int. Journal of Industrial Heat Engineering (Ukraine)</i> , 24 (4), pp.44-48, ISSN 0204-3602				
Witlox, H.M., Bowen, P.J.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>HSE Books</i> , (Contract Research Report 403/2001) (2002) ISSN 0717622509				
Bowen, P.J.,	2002	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Advances Wales</i> , (37), pp.16				
Avramenko, A.A., Basok, B.I., Solovoy, E.N., Bowen, P.J., Sierra-Espinosa, F.	2001	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Industrial Heat Engineering</i> , 23(6), pp.5-10, ISSN 0204-3602				
Bates, C.J., Ferreria, E., Teixeira, J.C.F., Bowen, P.J.,	2001	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Atomisation and Sprays</i> , 11, pp.107-124, ISSN 1044-5110				
Cameron, L.R., Bowen, P.J.,	2001	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Trans.IChemE</i> , 79(B), pp.197-205, ISSN 0957-5820.				
Comer, M.A., Bowen, P.J., Bates, C.J., Sapsford, S.M.,	2001	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Optical Diagnostics in Engineering</i> , 5 (1), ISSN 1364-4173				
Sazhin, S.S., Kaplanski, F., Feng, G., Heikal, M.R., Bowen, P.J.,	2001	CSE	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>FUEL</i> , 80 (13), pp.1871-1883, ISSN 0016-2361				
Barrioz, V., Proskuryakov, Y., Jones, E.W., Major, J., Irvine, S.J.C., Durose, K., Lamb, D.,	2007	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	"Highly arsenic doped CdTe layers for the back contacts of CdTe solar cells", <i>Mat. Res. Soc. Symp. Proc.</i> (2007), 1012, Y12-08				In an effort to overcome the lack of a suitable metal as an ohmic back contact for CdTe solar cells, a study was carried out on the potential for using a highly arsenic (As) doped CdTe layer with metallization. The deposition of full CdTe/CdS devices, including the highly doped CdTeAs and the CdCl ₂ treatment, were carried out by metal organic chemical vapour deposition (MOCVD), in an all-in-one process with no etching being necessary. They were characterized and compared to control devices prepared using conventional bromine-methanol back contact etching. SIMS and C-V profiling results indicated that arsenic concentrations of up to 1.5 x 10 ¹⁹ atoms/cm ³ were incorporated in the CdTe. Current-voltage (J-V) characteristics showed strong improvements, particularly in the open-circuit voltage (Voc) and series resistance (Rs). With a 250 nm thick doped layer, the series resistance was reduced from 9.8 Ω-cm ² to 1.6 Ω-cm ² for a contact area of 0.25 cm ² ; the J-V curves displayed no rollover, while the Voc increased by up to 70 mV (-12% rise). Preliminary XRD data show that there may be an As ₂ Te ₃ layer at the CdTe surface which could be contributing to the low barrier height of this contact.
Barrioz, V., Irvine, Jones, D.P.,	2002	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Advanced Engineering Materials</i> , 8(4), 8550-554				
Barrioz, V., Irvine, Jones, D.P.,	2003	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>J.Mat. Science: Mat Electro.</i> (2003), 14, 559-566				
Backstrom, C., Irvine, S.J.C., Barrioz, V.,	2003	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>J. Cryst. Growth</i> (2003), 248 (C), 222-228				
Irvine, S.J.C., Barrioz, V., Stafford, A., Durose, K.,	2005	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Thin Solid Films</i> (2005), 480, 76-81				
Mora - Seró, I., Bisquet, J., Fabregat-Santiago, F., Garcia-Belmonte, G., Zoppi, G., Durose, K., Proskuryakov, Y., Oja, L., Belaidi, A., Dittrich, T., Tena-Zaera, R., Katy, A., Levy-Clement, C., Barrioz, V., Irvine, S.J.C.,	2006	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Nano Letters</i> (2006), 6 (4), 640-650				
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A.J. Clayton, S.J.C. Irvine	2007	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal Crystal Growth</i> , 300, 277-283				
A.J. Clayton, A.A. Khandekar, T.F. Kuech, N.J. Mason, M.F. Robinson, S. Watkins, Y. Guo	2007	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal Crystal Growth</i> , 298, 328-331				
V. Barrioz, S.J.C. Irvine, E.W. Jones, R.L. Rowlands and D. Lamb	2007	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Thin Solid Film</i> 515 (15), 5808-5813				
Y.Y. Proskuryakov, V. Barrioz, J.D. Major, S. J. C. Irvine, K. Durose, E.W. Jones and D. Lamb	2007	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Applied Physics Letters</i> 9 (15) DOI:10. 1063/1.2790778				
I. Mora-Seró, J. Bisquet, F. Fabregat-Santiago, G. Garcia-Belmonte, G. Zoppi, K. Durose, Y. Proskuryakov, L. Oja, A. Belaidi, T. Dittrich, R. Tena-Zaera, A. Katy, C. Levy-Clement, V. Barrioz and S.J.C. Irvine	2006	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Nano Letters</i> 6 (4), 640 - 650				
G. Zoppi, K. Durose, S.J.C Irvine and V. Barrioz	2006	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Semiconductor Science and Technology</i> 21, 763-770				
S.J.C. Irvine, V. Barrioz, A. Stafford, K. Durose	2005	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Thin Solid Films</i> 480-481, 76-81				
D.A Lamb, S.J.C.Irvine	2004	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Crystal Growth</i> 273, Issues 1,2				
D.M. Ellis, S.J.C. Irvine, J. Mat. Sci	2004	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Materials in Electronics</i> 15, 6				
V. Barrioz, S.J.C. Irvine and D.P. Jones	2003	CSER	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal Mat. Science: Mat. Electro</i> 14, 559 - 556				
Nasrollahi, N., Knight, I.P., Jones, P.,	2007	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Landscape and Urban Planning</i> , pp.39-49, ISBN:0169-2046				
Nasrollahi, N., Knight, I.P., Jones, P.,	2007	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Indoor and Built Environment</i> , pp.255-272, ISBN:1423-0070				
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Jones, P., Knight, I.P., Pearson, J.,	2006	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Building and Environment</i> , pp.2835-2849, ISBN:0360-1323				
Stevenson, E., Alexander, D., Jones, P., Jones, B.,	2005	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>British Journal of Psychiatry</i> , pp.200-505				
Dunstan, F., Weaver, N., Araya, R., Bell, T., Lannon, S., Lewis, G., Patterson, J., Thomas, H., Jones, P., Palmer, S.,	2005	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Environmental Psychology</i> , 25 (3), pp.293-305, ISBN:0272-4944				
Lai, J.H.K., Yik, F.W.H., Jones, P.,	2004	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Asian Architecture and Building Engineering</i> , 22 (1/2)				
Lai, J.H.K., Yik, F.W.H., Jones, P.,	2004	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>International Journal of Service Industry Management</i> , pp.320-343				
Jones, P., Lannon, S., Patterson, J.,	2004	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Indoor and Built Environment</i> , pp.249-258				
Alexandri, E., Jones, P.,	2004	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Indoor and Built Environment</i> , pp.259-269, ISBN:1420-326X				
Alexandri, E., Jones, P.,	2004	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Facilities</i> , pp.44-52				
Jones, P., Alexander, D.,	2003	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Energy</i> , pp.877-893				
Jones, P.,	2002	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Transactions</i> , pp.1-4, ISBN:1023-697X				Hong Kong Institution of Engineers
Jones, P., Kippenberg-Kretzer, K.,	2002	WSA	Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Journal of Epidemiology and Community Health</i> , pp.48-55, ISBN:1470-2738				
Comparative study of trap densities of states in CdTe/CdS solar cells	2007		Recycling plastic film from waste sources in the UK: overcoming technical, economic and logistical barriers.	Journal	<i>Applied Physics Letters</i> (2007), 91 (15), (DOI: 10.1063/1.2790778)				