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The solar cells may be encapsulated in fluorinated ethylene propylene FEP or some other weatherproof translucent or transparent encapsulant to form a combined electrical module and a roof shingle. The interconnected solar cells are connected to connectors at the edge of the substrate through a connection to a common electrical bus or busses. An overlap area is arranged to receive the overlap of a cooperating similar shingle so that the cell portion of the cooperating shingle may overlies the overlap area of the roof shingle. Accordingly the same shingle serves the double function of an ordinary roof shingle which may be applied in the usual way and an array of cooperating solar cells from which electrical energy may be collected. It has been heretofore suggested that solar cell arrays be arranged with solar cell wafers in stepped arrangement over a rooftop or the like. It has also been suggested to cover a helmet or the like with a solar cell array for the collection of radiant energy. Further suggestions involve building blocks or the like in which solar cells are encapsulated. The suggested arrangements are difficult in their application to roofs and not readily intermixed with ordinary roofing shingles. One portion carries an array of solar cells to be exposed and the other is an overlap portion to be covered when applied to a roof or the like in the usual way of shingles. Such a shingle serves the function both of an ordinary roofing shingle and an array of solar cells for the collection of radiant energy. A fluorinated ethylene propylene copolymer described in U. This construction provides a somewhat rigid substrate which lays flat and facilitates fabrication of the complete shingle. On one side of the fiberglass cloth substrate thus partially prepared and on approximately one half of the exposed surface, a plurality of silicon solar cells 12 are arranged in a regular array of two rows, for example. The cells in a row are connected in series by conductors 14. The rows are connected together at the side edges of the shingles with conductors 16 and 18. The upper part of the shingle 10 is preserved as an overlap portion 20 thereby distinguishing it from the portion 22 which carries the array of solar cells. The arrays are electrically connected to connectors 24 and 26 at the top edge of the overlap portion. These connectors preferably comprise electrical contact pads. A mechanical attachment strip 28 is provided having a U-shaped cross section containing a plurality of spring-clips 30 in which the electrical contact pads 24 and 26 are received. The attachment strip 28 is secured to the roof, and the shingles 10 are pressed into its slot with each clip 30 connecting the contact pad 24 on one shingle to the pad 26 on the adjacent shingle. Thus both mechanical and electrical attachments are made simultaneously, and the attachment strip 28 need not be an electrically conductive material. A plastic material extruded to the proper U-shaped configuration is satisfactory. The shingle is constructed in a manner similar to that described in connection with the embodiment described above with the solar cells in rows. The rows are connected together at one side edge of each shingle at a junction 32 and terminated to extend just outside of the edge of the shingle in a male connecting element. At the other side edge, the interconnecting wires are formed at a junction 36 and thence brought to a female connector. The upper part of the shingle shown in FIG. It is contemplated that the junctions 32 and 36 may be in the portion 24 for protection. It will be apparent from FIGS. Accordingly, one may, if so desired, use the solar cell shingles on a portion of the roof and ordinary shingles on the remainder of the roof nailing them over the overlap portion or alternatively arranging the solar cell shingles over the overlap portion of an ordinary roofing shingle or interchanging them as may be desired to cover a specific area or proportion of the roof with the solar cell array shingles. As illustrated, electrical connections to the cells are brought out in a series parallel arrangement but it is obvious that other electrical connection arrangements, either all series, all parallel or different series parallel arrangements may be employed. Referring now to FIGS. The solar cells 42 may be mounted in the same fashion and an overlap area 44 may be left free of cells to serve the same function. In forming the shingles 40, a locking tab 46 is provided

on the outer surface connected to the shingle at about the line between the overlap and solar cell array portions 44 and 45, preferably overlapping just into the cell portion 45, but not covering any cells. At the bottom of the shingle 40 on the unexposed side, a complementary hooked or folded over portion 48 is provided so that when the roof is being laid with the solar cell shingles such as 40 the hooked portions 48 may engage the tabs 46 to restrain the shingles from being blown upward and to prevent the wind from disturbing them. In this instance, a male connector 50 is brought out at one side but in the overlap area of the tab 46 so that it is covered and well-protected when the shingles are laid in the ordinary fashion with the succeeding rows displaced to cover the joint side-by-side shingles. It will be apparent from the foregoing that a solar cell shingle according to the invention has the advantages of providing a shingle which may be used and applied in a substantially conventional manner and retains the advantages of an efficient solar cell array. Claims 6 What is claimed is: A solar cell shingle comprising a substrate having a cell portion and an adjacent overlap portion, an array of electrically interconnected solar cells mounted on said cell portion and connected to connectors on said shingle, whereby a like shingle may be arranged in overlapping relation on said overlap portion leaving said cells exposed. A shingle as claimed in claim 1, said connectors comprising a male connector and a female connector. A shingle as claimed in claim 1, said connectors comprising a male connector on one side edge of the shingle and a female connector on the other side edge of the shingle for interconnection to like shingles. A shingle as claimed in claim 1, said connections leading to connector pads at the top edge of the overlap portion of said shingle. The shingle as claimed in claim 4, and in combination therewith a connector strip having a channel and means for contacting said connector pads. A solar cell shingle comprising a roofing material, an array of solar cells mounted on a first portion of said shingle, and a second portion of said shingle for receiving the overlap of a similar shingle.

Chapter 2 : Rockin' with Judy Jetson - Wikipedia

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You can help by adding to it. February The gold standard formed the financial basis of the international economy from to Capitalism was carried across the world by broader processes of globalization and by the beginning of the nineteenth century a series of loosely connected market systems had come together as a relatively integrated global system, in turn intensifying processes of economic and other globalization. Industrialization allowed cheap production of household items using economies of scale while rapid population growth created sustained demand for commodities. Globalization in this period was decisively shaped by 18th-century imperialism. Also in this period, areas of sub-Saharan Africa and the Pacific islands were colonised. The conquest of new parts of the globe, notably sub-Saharan Africa, by Europeans yielded valuable natural resources such as rubber , diamonds and coal and helped fuel trade and investment between the European imperial powers, their colonies and the United States: The inhabitant of London could order by telephone, sipping his morning tea, the various products of the whole earth, and reasonably expect their early delivery upon his doorstep. Militarism and imperialism of racial and cultural rivalries were little more than the amusements of his daily newspaper. What an extraordinary episode in the economic progress of man was that age which came to an end in August The United Kingdom first formally adopted this standard in Soon to follow were Canada in , Newfoundland in , the United States and Germany de jure in New technologies, such as the telegraph , the transatlantic cable , the radiotelephone , the steamship and railway allowed goods and information to move around the world at an unprecedented degree. The postwar boom ended in the late s and early s and the situation was worsened by the rise of stagflation. The extension of universal adult male suffrage in 19th-century Britain occurred along with the development of industrial capitalism and democracy became widespread at the same time as capitalism, leading capitalists to posit a causal or mutual relationship between them. Moderate critics argue that though economic growth under capitalism has led to democracy in the past, it may not do so in the future as authoritarian regimes have been able to manage economic growth without making concessions to greater political freedom. Moderate critics have recently challenged this, stating that the current influence lobbying groups have had on policy in the United States is a contradiction, given the approval of Citizens United. This has led people to question the idea that competitive capitalism promotes political freedom. The ruling on Citizens United allows corporations to spend undisclosed and unregulated amounts of money on political campaigns, shifting outcomes to the interests and undermining true democracy. According to Hahnel, there are a few objections to the premise that capitalism offers freedom through economic freedom. These objections are guided by critical questions about who or what decides whose freedoms are more protected. Often, the question of inequality is brought up when discussing how well capitalism promotes democracy. An argument that could stand is that economic growth can lead to inequality given that capital can be acquired at different rates by different people. In *Capital in the Twenty-First Century* , Thomas Piketty of the Paris School of Economics asserts that inequality is the inevitable consequence of economic growth in a capitalist economy and the resulting concentration of wealth can destabilize democratic societies and undermine the ideals of social justice upon which they are built. Singapore has a successful open market economy as a result of its competitive, business-friendly climate and robust rule of law. Nonetheless, it often comes under fire for its brand of government which though democratic and consistently one of the least corrupt [66] it also operates largely under a one-party rule and does not vigorously defend freedom of expression given its government-regulated press as well as penchant for upholding laws protecting ethnic and religious harmony, judicial dignity and personal reputation. Hall and David Soskice argued that modern economies have developed two different forms of capitalism: Germany, Japan, Sweden and Austria. Those two types can be distinguished by the primary way in which firms coordinate with each other and other actors, such as trade unions. In LMEs, firms primarily coordinate their endeavors by way of hierarchies and market

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mechanisms. Coordinated market economies more heavily rely on non-market forms of interaction in the coordination of their relationship with other actors for a detailed description see Varieties of Capitalism. These two forms of capitalisms developed different industrial relations , vocational training and education , corporate governance , inter-firm relations and relations with employees. The existence of these different forms of capitalism has important societal effects, especially in periods of crisis and instability. Since the early s, the number of labor market outsiders has rapidly grown in Europe, especially among the youth, potentially influencing social and political participation. Using varieties of capitalism theory, it is possible to disentangle the different effects on social and political participation that an increase of labor market outsiders has in liberal and coordinated market economies Ferragina et al. This signals an important problem for liberal market economies in a period of crisis. If the market does not provide consistent job opportunities as it has in previous decades , the shortcomings of liberal social security systems may depress social and political participation even further than in other capitalist economies. Academic perspectives on capitalism In general, capitalism as an economic system and mode of production can be summarised by the following: High levels of wage labour.

Chapter 3 : Biodiesel Magazine - The Latest News and Data About Biodiesel Production

The coal fields of Washington, by S.A. Ash. -- Methods of mining and preparation of coal, by H.F. Yancey and S.A. Ash. -- Production, distribution and use, by O.E. Kiessler and Joseph Daniels. -- Relation of mine samples to commercial shipments, by N.H. Snyder and L.N. Plein. --Analyses of.

Chapter 4 : Capitalism - Wikipedia

Interest in coal slackened somewhat as the use of fuel oil increased for industrial and domestic heating, but a change of attitude toward coal beÂ- came apparent when it was realized that oil supplies were not unlimited.

Chapter 5 : Analyses of Washington coals / - CORE

Coal in Washington: distribution, geology, mining, preparation, uses, and economic value of coal resources of Washington / by Joseph Daniels.

Chapter 6 : Dynasty (TV series) - Wikipedia

Trivia: Sandler means cobbler in Hebrew. See moreÂ» Goofs: When Max, as the overweight teen, sees Leon go up in the elevator, it stops on the third floor, but when Max goes upstairs, he (as Leon) exits the staircase on the 4th floor and finds Leon's apartment.

Chapter 7 : Constellation Brands Company Profile | Markets Insider

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Chapter 8 : Daniels Family Trees, Crests, Genealogy, DNA, More

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