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(71) Applicant (*for all designated States except US*): OPTICOM A/S [NO/NO]; Ski Næringspark, N-1400 Ski (NO).

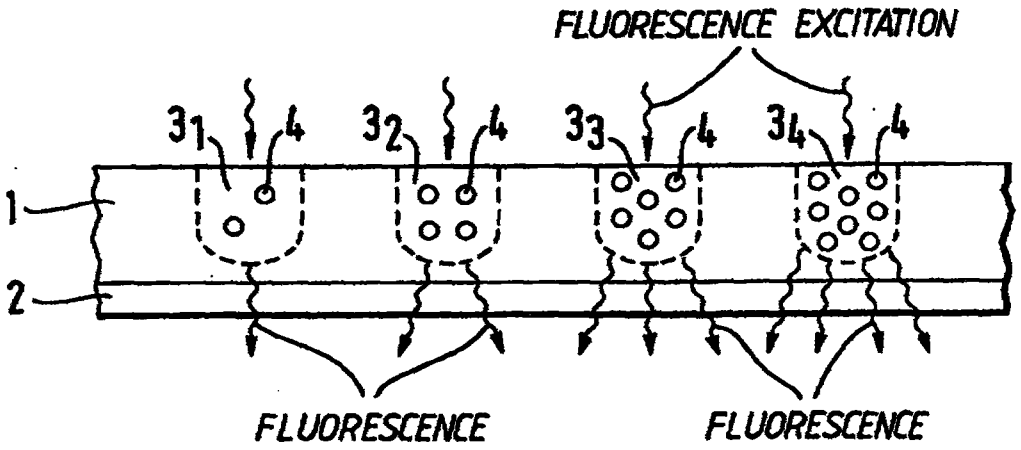
(72) Inventors; and
(75) Inventors/Applicants (*for US only*): GUDESEN, Hans, Gude [NO/NO]; Tyrihansveien 5, N-1639 Gamle Fredrikstad (NO). NORDAL, Per-Erik [NO/NO]; Hestehagen 18, N-1360 Nesbru (NO).

(74) Agent: ONSAGERS PATENTKONTOR A/S; P.O. Box 265 Sentrum, N-0103 Oslo (NO).

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(57) Abstract

A data carrying medium comprises a fluorescent layer with data carrying structures. The fluorescent layer includes fluorescent dye molecules embedded in a polymer base material. By employing a laser beam in order to create the data carrying structures, these obtain a lower fluorescence in relation to the fluorescence from a corresponding region of the virgin, fluorescent layer when the data carrying structure is irradiated with fluorescence exciting radiation. By modulating the laser beam several bits can be stored in each data carrying structure, with the result that the value of a stored datum corresponds to the value of a specific level in a multilevel code. The stored data are read by means of fluorecence excitation of the fluorescent dye molecules in the data carrying structure. The fluorescence is detected in a detector device, the intensity of the detected fluorescence corresponding to the value of the stored datum. In this fashion 1-10 bits can be stored in a data carrying structure smaller than 0.25 μm^2. This is a substantial increase in the data density compared to previously known optical data storage media.

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