

RANDOM DYE LASING SUPPORTED BY ELASTIC MULTIPLE LIGHT SCATTERING

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S u m m a r y

The elastic multiple light scattering, at which a partial confinement of photons within the area where amplification exists, promotes the development of a stimulated radiation with all tags of amplified stimulated emission (ASE). Because the spectral narrowing of ASE with increase in the pumping runs fluently without any catastrophe tags which are possible if arbitrary resonances (cavity modes, distributed feedback modes, or Anderson localization modes) are present, ASE conserves the initial smooth spectral distribution in spite of the strong spectral narrowing. The simple theoretical analysis of ASE under elastic multiple light scattering in connection with a band width evolution and scaled threshold conditions that is based upon the approximate determination of the mean free path in EMLS media as $l \approx (N\sigma_{\text{sct}} - \alpha_{\text{gain}})^{-1}$ and the Kubelka—Munk approximation is completed.