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(54) **BEATING SIGNAL MONITORING MODULE, TERAHERTZ WAVE GENERATION DEVICE AND OPTICAL SIGNAL MONITORING DEVICE INCLUDING THE BEATING SIGNAL MONITORING MODULE**

(71) Applicant: **Electronics and Telecommunications Research Institute**, Daejeon (KR)

(72) Inventors: **Namje Kim**, Daejeon (KR); **Sang-Pil Han**, Daejeon (KR); **Kyung Hyun Park**, Daejeon (KR); **Han-Cheol Ryu**, Daejeon (KR); **Hyunsung Ko**, Seoul (KR); **Jeong Woo Park**, Daejeon (KR)

(73) Assignee: **ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE**, Daejeon (KR)

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CPC ***G01J 9/04*** (2013.01)

(58) **Field of Classification Search**
CPC G01N 21/3581
See application file for complete search history.

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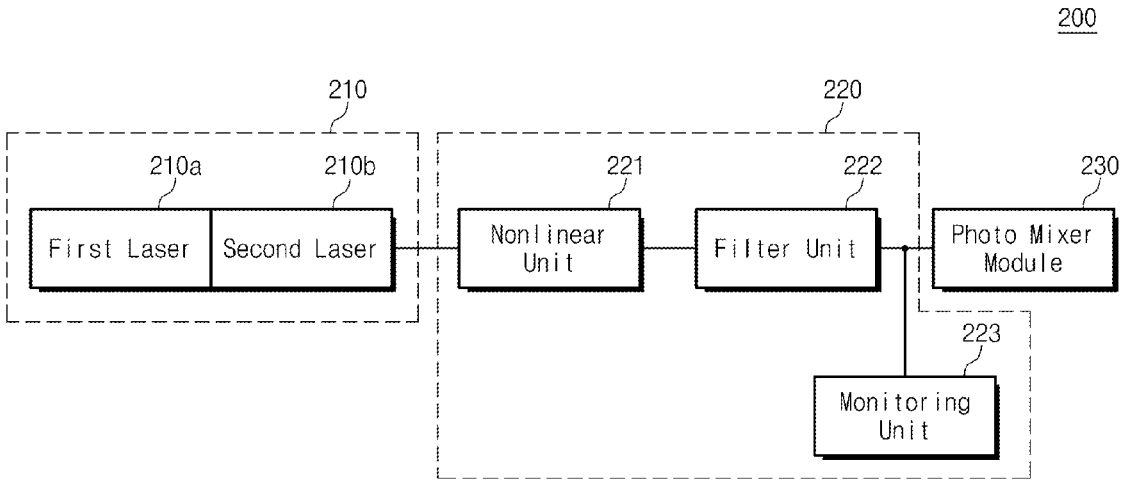
Primary Examiner — David Porta
Assistant Examiner — Mamadou Faye

(57) **ABSTRACT**

The inventive concept relates to a beating signal monitoring module and a terahertz wave generation device and an optical signal monitoring device that including the beating signal monitoring module. The beating signal monitoring module includes a nonlinear unit generating an optical signal including a FWM light in response to a beating signal generated from a first light and a second light; a filter unit separating the FWM light from the optical signal and outputting the separated FWM light; and a monitoring unit monitoring the beating signal using the separated FWM light. The beating signal monitoring module and a terahertz wave generation device and an optical signal monitoring device that including the beating signal monitoring module can effectively monitor a beating signal being generated by two lasers using a Four Wave Mixing signal.

11 Claims, 8 Drawing Sheets