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(54) **TRANSMITTING AND RECEIVING APPARATUS AND METHOD FOR OPTIMIZING PERFORMANCE OF ADAPTIVE MODULATION AND CODING IN A MULTIPLE INPUT AND MULTIPLE OUTPUT ANTENNA COMMUNICATION SYSTEM**

(75) Inventors: **Su-Ryong Jeong**, Suwon-si (KR);
Seok-Hyun Yoon, Suwon-si (KR);
Sung-Kwon Hong, Seoul (KR);
Young-Kwon Cho, Suwon-si (KR);
Chang-Ho Suh, Seongnam-si (KR)

(73) Assignee: **Samsung Electronics Co., LTD** (KR)

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(58) **Field of Classification Search** **375/267, 375/299, 346, 347, 349; 370/334**
See application file for complete search history.

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Primary Examiner—Curtis B Odom

(74) *Attorney, Agent, or Firm*—The Farrell Law Firm, PC

(57) **ABSTRACT**

A transmitting and receiving apparatus and method for optimizing performance of an adaptive modulation and coding (AMC) in a multiple input and multiple output antenna (MIMO) communication system. When the AMC is applied to the MIMO system, the optimal scheme is different depending on the MIMO channel situation, the maximum transmission power, and the maximum modulation order. The transmitting apparatus includes an ordering selector that selects a successive interference cancellation (SIC) scheme in order to obtain a maximum MIMO-AMC performance, and the receiving apparatus includes a channel quality information (CQI) generator corresponding to the SIC scheme selected at the transmitting apparatus.

11 Claims, 13 Drawing Sheets

