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(54) Title of the invention : AN ADDITIVE FOR DEPRESSING THE POUR POINT OF WAXY CRUDE OILS

(51) International classification	:C01B0032230000, C09K0008524000, C08K0003040000, C07D0233580000, H01M0010056900	(71)Name of Applicant : 1)INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES) DHANBAD Address of Applicant :Department of Petroleum engineering, Indian Institute of Technology(Indian School of Mines), Dhanbad,Jharkhand, India-826004 Jharkhand India
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(57) Abstract :

The subject matter disclosed herein relates to an additive for depressing the pour point of waxy crude oil that comprises of an ionic liquid composed of 1-chlorooctane and 1-methylimidazole and vinyl graphene oxide (VGO). The ionic liquid is polymerized with vinyl graphene oxide (VGO) to form a nano-composite poly(1-octyl 3-methyl imidazolium chloride)-graphene oxide or P[(OMIM) Cl]-1% GO. A method for preparing the additive comprising oxidation of graphite to graphene oxide (GO), functionalization of graphene oxide (GO) with acrylonitrile to form vinyl graphene oxide (VGO), synthesis of ionic liquid 1-octyl 3-methyl imidazolium chloride [(OMIM) Cl] and polymerization of vinyl graphene oxide (VGO) with the ionic liquid 1-octyl 3-methyl imidazolium chloride [(OMIM) Cl]. The Nano-composite additive reduces the pour point and improves the other flow properties of crude oil significantly, enabling the crude oil to flow at very low temperatures.

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