As mentioned ~~before~~earlier, seven test cases ~~are~~ were numerically studied under equal flow conditions and the~~n~~ heat transfer performance ~~are~~ was compared. In case 1, the heat transfer inside the straight channel ~~is~~ was simulated. In case 2, the presence of a stationary blade (SB) inside the channel and, in cases 3 and 4, ~~the~~ effects of oscillating (OB) and rotating ~~blade~~ (RB) blades~~are~~ were investigated. In cases 5, 6, and 7, ~~the~~ effect of stationary (SC), oscillating (OC), and rotating circular ~~cylinder~~ (RC) cylinders~~are~~ were studied. ~~The in~~Influences of Reynolds number, maximum degree of oscillating (θ), rpm, and Prandtl number on heat transfer ~~are~~ were also considered~~investigated~~. R~~evolutions per minute (r~~pm~~)~~is~~ was used to display the speed of rotating and oscillating blade or cylinder~~.~~; ~~The~~ its ~~rpm~~ value in the oscillating condition~~s~~is was considered equal to ~~the~~ that ~~rpm~~ of the rotating one with the same angular velocity.

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~~The r~~Results of MSD calculations pertaining to the titled gases at P-6, P-7, and P-10 graphene pour size~~s~~ are displayed in ~~Figures~~ Fig. 4, 5, and 6, respectively.

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As shown in ~~Figure~~ Fig. 16, the VDW energy between the Kr gases and ~~the~~ edge atoms of pore-7 at graphene membrane ~~is~~ was more negative than that of oxygen and nitrogen cause, transit Kr gases through nanoporous graphene membrane~~,~~. ~~which This results~~ resulted in more permeation events of Kr through nanoporous graphene than that of oxygen and nitrogen.

…..

Anthropometric and biochemical characteristic~~s~~ of the studied population are summarized in ~~table~~ Table 1. More than half of the ~~studied~~ subjects (62.9%) ~~had~~ age~~d~~~~greater~~ more than 30 years old. Educational status ~~in~~ of 34.8% of the subjects was under diploma, 34.8% had high school diploma ~~degree~~, and 30.3% had educational levels above high school diploma. According to the obesity ~~cut~~ cut-off~~soff~~ points, 94.4% of the subjects ~~was~~ were overweight and obese, 82% had waist circumference of above 88 cm, and 96.6% had waist to stature ratio (as index of central obesity) ~~in 96.6% was~~of higher than ~~above~~ 0.5.