



Kyushu University, Center for Molecular Systems (CMS)  
**The 73th CMS International Seminar**

# Growth and gas molecule sensing properties of 2D transition metal dichalcogenides

**Prof. Mahesh Kumar**

(Indian Institute of Technology Jodhpur, INDIA) [LAB](#)

**令和4年10月21日(金曜日) 15:00-16:30**

**伊都キャンパス ウェスト4号館 315号室**

(物質系5番講義室)

(講師の先生のご紹介等)

Kumar先生は、2D材料分野、センサー開発でご活躍の先生であり、現在、JSPSのプログラムで長崎大学に短期滞在中です(機能材料化学研究室/ホスト：清水康博教授)。本学の研究者と是非とも交流を持ちたいとのことでしたので、今回のセミナーを企画致しました。2D材料を研究されている方、センシングデバイスを開発されている方、ガスセンサーの活用を考えられている方など、幅広い分野の方にお越しいただければと思います。奮ってご参加ください！



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Free Admission



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**Date & Time: 21st Oct. 2022 (Fri.) 15:00-16:30**  
**West-4, Room 315 (Lecture Room #5), Ito campus**

**Abstract:** The profusion of 2D materials has provided a broad material platform for technological research and the growth of nano- and atomic-level applications. The invention of graphene has sparked interest in other unique 2D materials, a process known as modern-day "alchemy," in which scientists attempt to transform all conceivable periodic table components into 2D material structures and shapes. Industrial applications for 2D material devices with excellent quality and outstanding optical encoder performance are numerous including sensors. 2D metal dichalcogenides including MoS<sub>2</sub>, WS<sub>2</sub>, SnS<sub>2</sub>, etc., have received significant attention from the worldwide scientists for a variety of novel applications owing to their unique electronic, chemical, optical, and physical properties. We have grown various nanostructures of MoS<sub>2</sub> including nanowire networks for high-performance NO<sub>2</sub> sensors. The talk will also focus on various methods of improving the sensitivity and selectivity of the gas molecule sensors.



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