LIST OF PUBLICATIONS

Faculty: Prof. G S VinodKumar

Department of Mechanical Engineering

JOURNAL PUBLICATIONS

Akshay Devikar,Dipak Bhosale,K. Georgy, Manas Mukherjee,**G.S. Vinod Kumar**, Effect of Beryllium on the stabilisation of Mg-3Ca alloy foams, *Materials Science and Engineering B, (2022)* ***IF:3.40*** 10.1016/j.mseb.2022.116007

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G.S. Vinod Kumar, S.Sasikumara, K.Georgy, M.Mukherjee, Production, Stability, and Properties of In-situ Al-5ZrB2 Composite Foams, *Materials Science & Engineering A, (2022)* ***IF:5.248*** 10.1016/j.msea.2022.143501

K. M. Saradesh, K. R. Ravi & **G.S. Vinod Kumar**, The age hardenability of 22Karat gold (Au-5.8wt.%Cu-2.5wt.%Ag) alloyed with Titanium, *Gold bulletin, (2021)* ***IF:1.56*** *https://doi.org/10.1007/s13404-021-00301-9*

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Verfahren zur Herstellung von Metallschäumen und Metallschaum
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Jointly with Titan Company Ltd (jewelry Division)
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G. S. Vinod Kumar and Akshay R. Devikar
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INDUSTRIAL RESEARCH PARTNERSHIP/COLLABORATION

Industry	Project title	Salient achievements
Titan Company Ltd, Hosur (Tanishq)	**Hardening of 22k and 24 K gold**	We have developed a technology for improving the hardness of 22k gold for weight saving and high strength in cast and hand-made jewelleries. The technology has been transferred to Titan for the production of jewellery with the hard gold. First pilot scale was launched on 28th October 2016 on Danteras day. The second pilot scale was launched on 22 March 2018. Presently several designs of machine made bangle have been made and are available for sale in Tanishq Jewelleries in

		several flagship boutiques around India. The PI has realized this entire prestigious project in a record time of 20 months, which includes laboratory experiments, series of industrial trials and production by Titan company ltd. **The technology has been patented jointly by Titan and SRM and it is owned by both the parties.**
Titan Company Ltd, Hosur (Watches)	**High strength lead free and leaded brass**	The purpose of increasing the hardness and strength in brass in order to minimize handling defects during manufacturing (polishing and plating) and also to improve the scratch and wear resistance at the user end. The project kick started on April 2018 and PI has delivered the proof of concept to the industry within five months on August 2018. The industry made pilot scale production and evaluated the property enhancement. As the way forward rigorous industrial trials are being conducted and "WATCH CASES" made using the hard lead free brass will be launched in the market in pilot scale on March 2019. **Joint patent filed.**

FUNDED PROJECTS

Sl. No.	Sponsoring Agency	PI/Co-PI	Title of project	Collaborators	Total Amount	Period of support	Completed/on-going

1.	Naval Research Board (NRB)	PI	Stabilization mechanism in aluminium foams containing solid particles	Nil	23.65 Lakhs	3 years (2014-2017)	Completed
2.	DST-SERB-EMR (MMME)	PI	Development of Liquid metal processing route for foaming magnesium	Dr. M. Mukherjee (Co-PI) IITM	66 Lakhs	4 years (2017-2021)	Ongoing
3.	DST-SERB-EMR (Chemical Sciences)	Co-PI	Development of Layered Conducting Ceramic Nanomaterials of **MAX phase** and MXenes for Energy Conversion and Storage Applications	Dr. BhalChandra Kakade, SRMIST (PI)	50 Lakhs	3 years (2017-2020)	Completed

INDUSTRY FUNDED PROJECT

Sl. No.	**Sponsoring Industry**	**Title of project**	**Total amount including Consultancy charges**	**Period of support**	**Status**
1.	Titan Company Ltd - Jewellery Division, Hosur (Tanishq)	Developing novel gold alloys for contemporary Jewellery application	29.6 lakhs	1 year	Ongoing
2.	Titan Company Ltd, Hosur, (Jewelry Division – TANISHQ)	Hardening of 22k and 24k gold	3.2 Crores	3 years (2015-2018)	Completed

3.	Titan Company Ltd, Hosur, (Watches Division) & RMI, Wapi, Mumbai	Hardening of leaded and lead free Brass	8.7 lakhs	1 year (2018-2019)	Industrial trials Ongoing
4.	Titan Company Ltd, Hosur, (Jewelry Division – TANISHQ)	Tarnish free Silver	10 Lakhs	2 years (2017- 2019)	Industrial trials Ongoing