Seminar and workshop on machining of compacted graphite iron (CGI)

Preliminary Program:

09:00– 12:00 Seminar

WELCOME
Ulrika Brohede, Swerim and Peter Krajnik, Chalmers

Swedish Research on Machining of Compacted Graphite Iron (CGI)
There is a growing tendency to utilise CGI in automotive industries because of its better mechanical properties compared to Grey Cast Iron (GCI). However, machining of CGI is relatively more challenging, partly due to its improved mechanical properties as well as the differences in the tribological conditions on the tool surfaces when it is compared to machining grey iron. A number of nationally funded projects have been dedicated to the understanding of material characteristics that influence the machinability of CGI. The results of those projects are summarised in this presentation. In particular, the focus is placed on the material aspects e.g. microstructure and mechanical properties affecting the machinability of CGI.

International Research on The Machinability of Compacted Graphite Iron (CGI
One of the most prominent utilizations for compacted graphite iron (CGI) is in the automotive industry where the demand for lower emissions and higher engine efficiency have driven the advancement of diesel engine technology. The abilities of CGI provide for stronger and thinner engine components with a lower weight compared to gray cast iron. However, in order to gain widespread recognition, the machinability of CGI must be increased. This presentation will summarize what has been researched internationally in terms of improving machinability of CGI with a focus on tool material, tool coatings and the machining process.

Convert existing production from gray cast iron to CGI with retained capacity
CGI is a probable future material for Volvo engine components such as cylinder heads and cylinder blocks. This will lead to a lot of challenges in production, where capacity loss is one of them. How do we convert existing production lines, which are made to machine grey cast iron, to start machine CGI without capacity losses? If we can solve it with processing technique, then we can avoid large investments.

Challenges and needs in CGI component manufacturing.
Erik Åström, SCANIA

12:00–13:00 LUNCH Restaurang Puur Electrum

13:15–16:30 Workshop

Together we identfy research objectives outgoing from challenges faced by the industry. The aim is to formulate research questions that can kick-off new research projects within the area of CGI machining.

Participation from industry and researchers is crucial. The workshop will be lead by Swerim and Chalmers representatives from Sandvik Coromant, Scania and Volvo will participate.

~15 COFFEE