

## Workshop »Coatings for Tools & Components«

### Optimization of coating processes efficiency

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With rising energy, labor, and location costs, industrial companies frequently meet new challenges and must constantly optimize their production. Increasing the efficiency of the general value chain is a daily challenge that coating service providers worldwide must face. For PVD/PECVD coating technology, this means a stronger focus on shorter cycle times and maximization of the load density inside the coating chamber. The optimization of the process time makes it possible to increase the number of batches per day, which results in a more efficient machine utilization. This leads, for example, to a reduction of effective costs per piece. Robert Bosch Manufacturing Solutions GmbH deposits a-C:H layers through a large-volume electron-cyclotron resonance ion source. By extending this source technology, the process times can be reduced by 50 %, especially during substrate plasma pretreatment and DLC layer deposition. In addition, this expansion can maximize the load density and thus reduces the effective coating costs as well as the energy demand per piece. The expansion of the plasma source and the resulting process optimization, in particular the change of the coating properties, as well as the process-related limitations are discussed in this presentation.