Raschka Engineering

Fluidized Bed Technology

拉斯卡工程

流化床技术

Karlsruhe, March 13th, 2015

Raschka Technology
拉斯卡技术

- More than 60 years of experience
  超过60年的相关经验

- Planning and construction of fluidized bed incineration plants for
  为以下客户提供流化床焚烧炉的设计及建设：
  - Environmentally friendly thermal waste disposal
    环境友好型的废物热处置
  - Energy recovery and utilization
    能源回收及利用
  - Energy generation
    能源生产

- Efficient disposal and utilization of liquid, pasty and solid materials
  对液体、糊状物及固体物料进行有效的处理及利用：
  - Municipal and industrial sewage sludge and waste
    市政及工业废水污泥及废弃物
  - Waste from chemical, pulp and paper industry
    化工、纸浆及造纸工业的废弃物
  - Inferior and low grade coal
    劣质或低质煤
  - Industrial, refinery and coal slurries
    化工、炼油及煤炭行业产生的三泥
  - Biomass, bark
    生物质燃料及树皮
  - Pyritiferous ore / pyrite roasting
    黄铁矿或含黄铁矿物质的焙烧
- More than 100 references in Europe and Asia
  在欧洲和亚洲地区超过100个项目实例

Thermal disposal and utilization of sewage sludge
污水污泥的热处置及利用

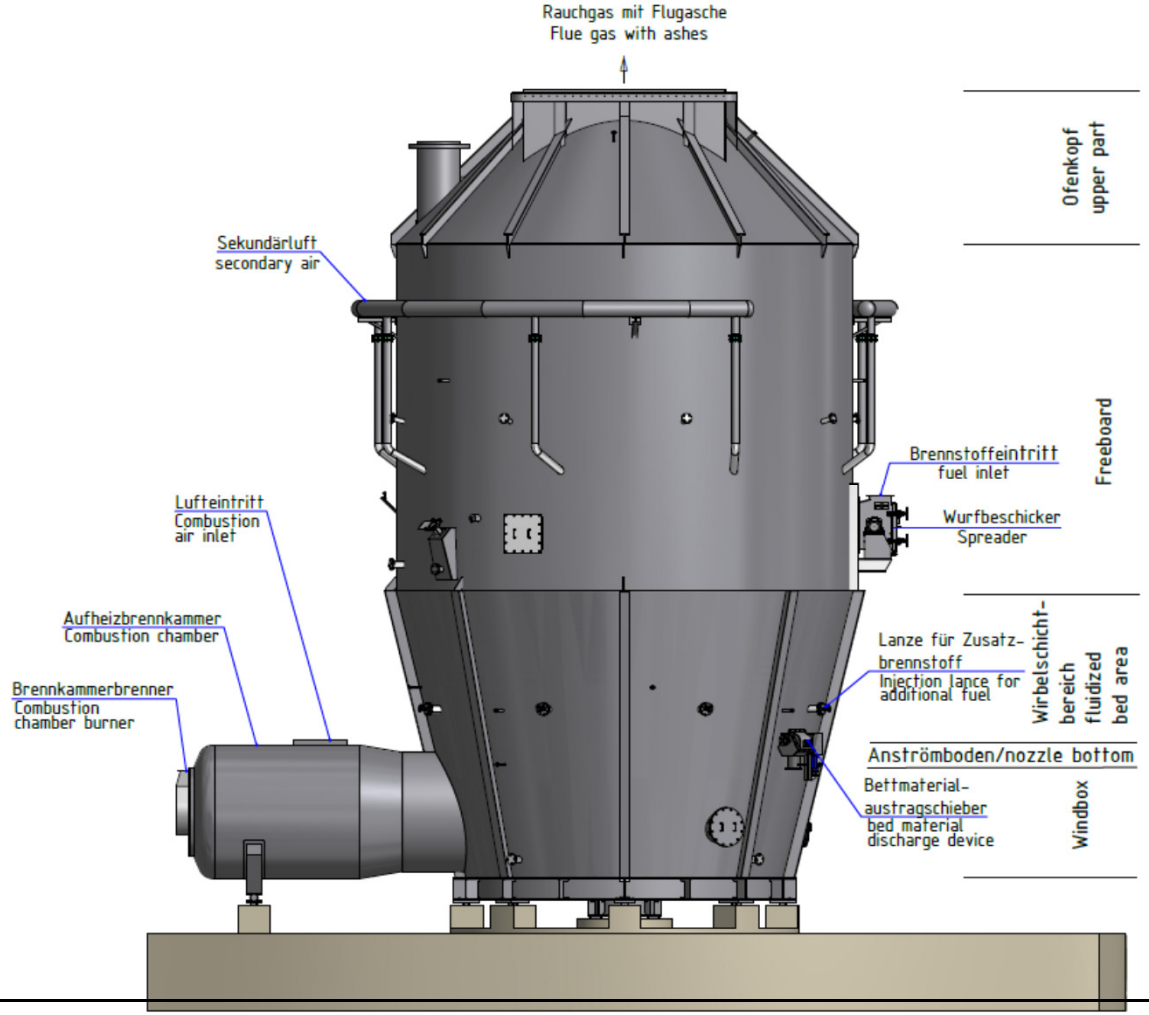
The solution:
解决办法
Combustion in Raschka fluidized bed incineration plants
在拉斯卡流化床焚烧炉内焚烧

- **evaporation and superheating of the sludge water**
  含固污水的蒸发及过热

- **complete combustion of the organic substances/pollutants**
  有机物及污染物的完全燃烧

- **inorganic pollutants are glowed and discharged as concentrated residues of the flue gas cleaning**
  无机污染物在炉内被烧透并作为烟气净化的富集物排放
- **environmentally friendly disposal**
  环境无害化排放
- **energy recovery**
  能量回收
- **auto-thermal incineration process without additional fuel**
  不添加额外燃料的自持燃烧过程
- **surplus energy utilization = power generation, heating …**
  余热利用= 发电、供热等等

Core component: Raschka fluidized bed incinerator
核心竞争力：拉斯卡流化床焚烧炉



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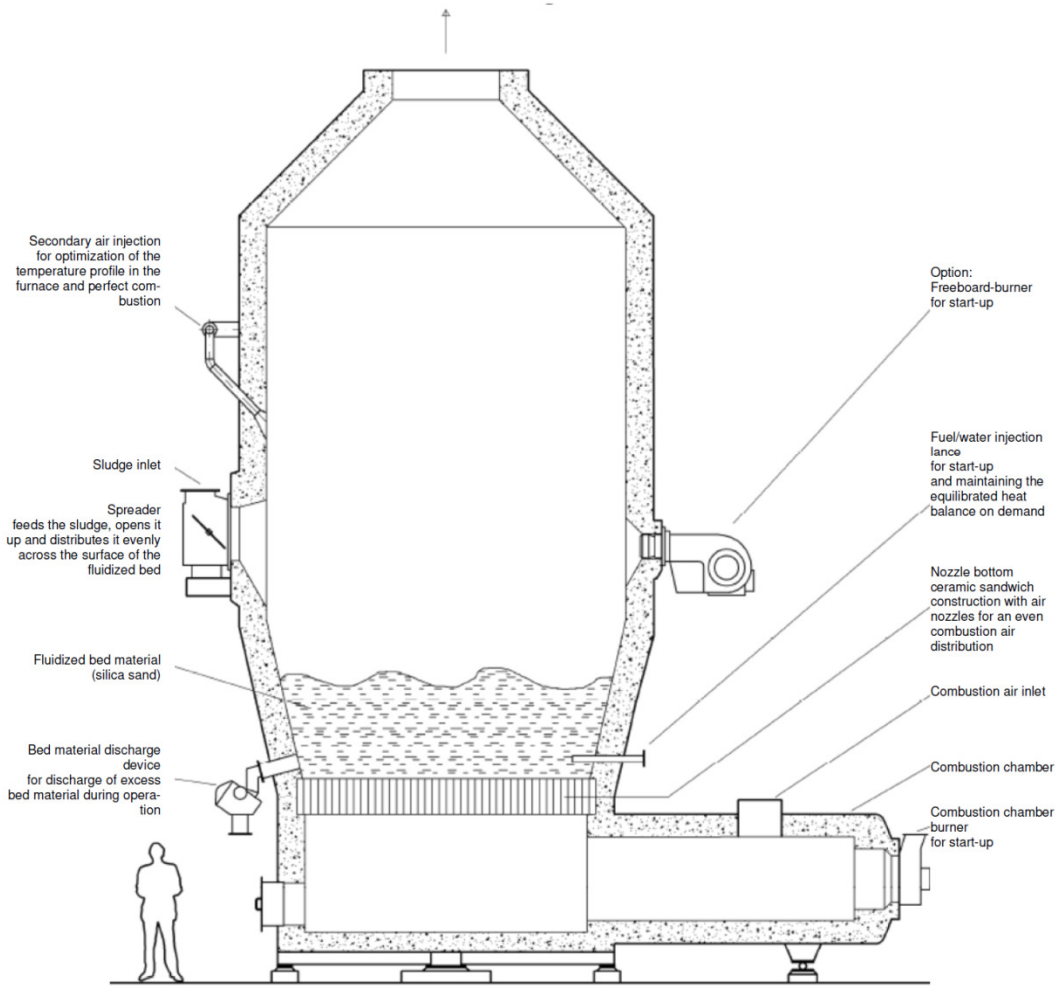
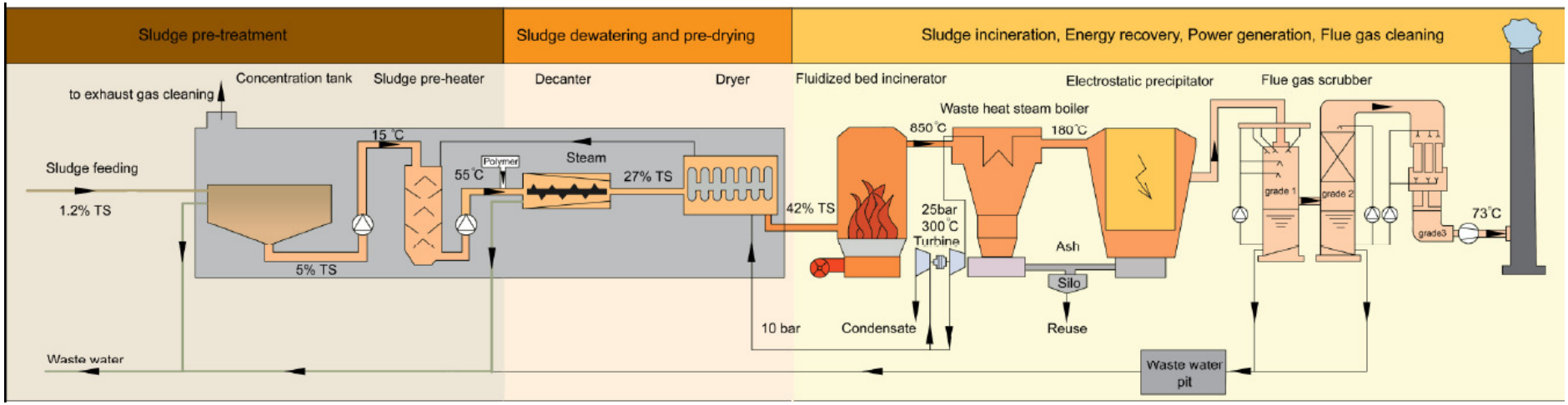


Fluidized bed incineration plant, Karlsruhe, Germany
德国卡尔斯鲁厄市的流化床焚烧工厂

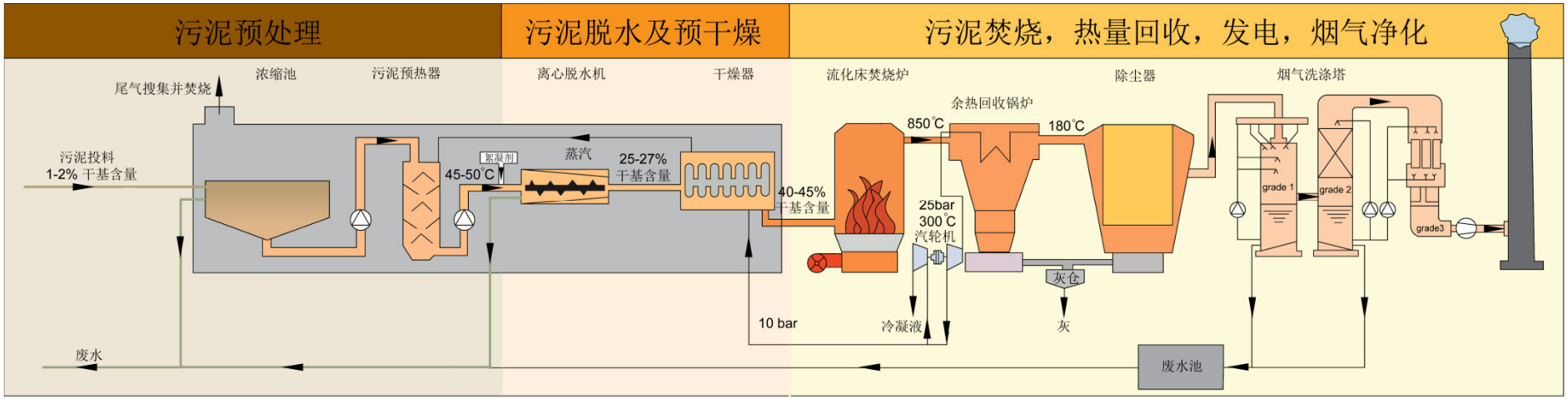
Plant and process overview 工艺概况



Combustible throughput (at nominal load), referring to dry substance

Sewage sludge (not digested) produced in the Karlsruhe WWTP	1‘640 kg/h
Screenings produced in the Karlsruhe WWTP	80 kg/h
Lightweight substances from a biological waste fermentation plant	60 kg/h
Sewage sludge (digested) from other WWTPs	420 kg/h
Total	2‘200 kg/h

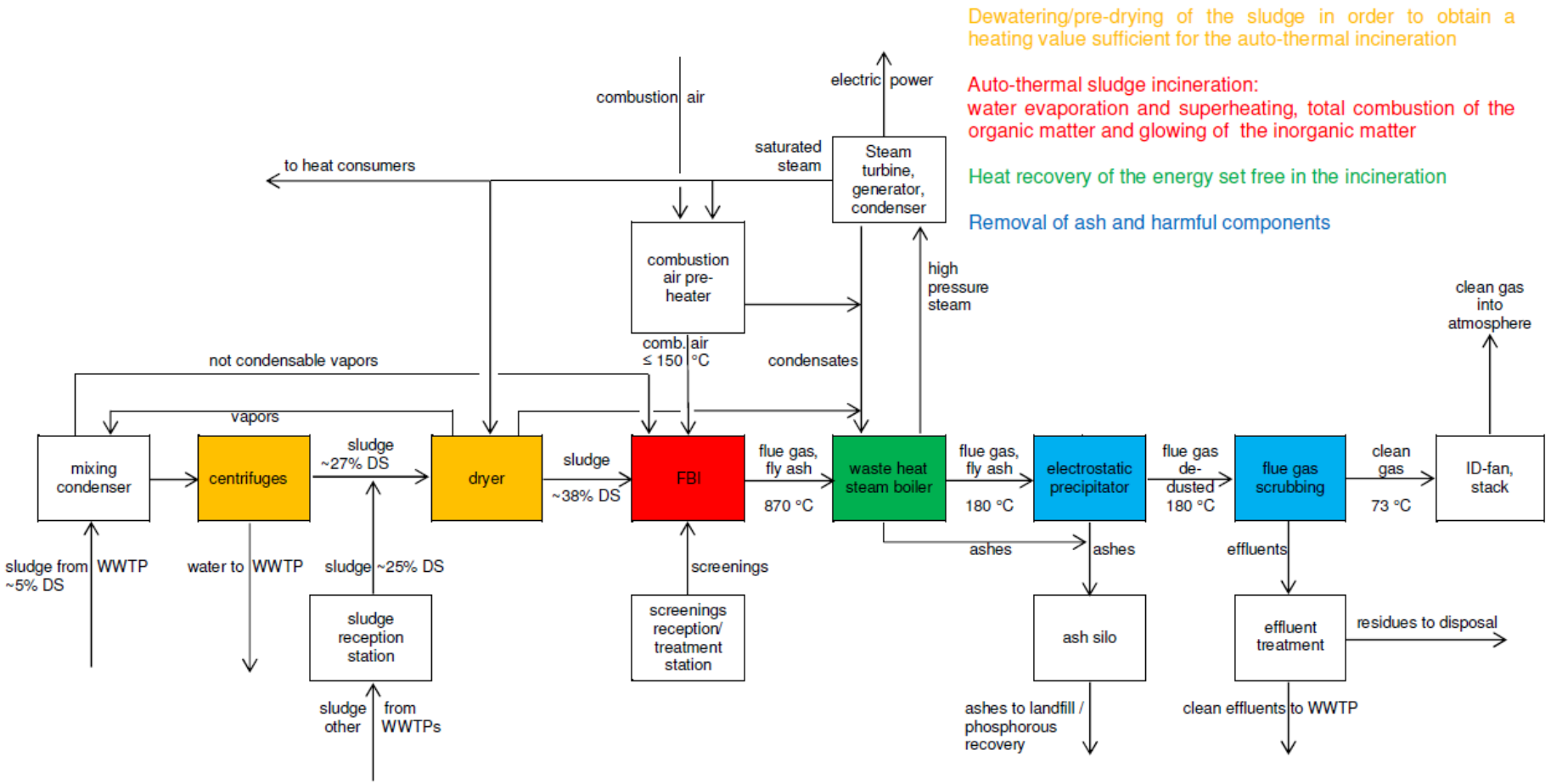
Plant and process overview 工艺概况



额定负载下，焚烧的处理能力(折合成干物质)

来自卡尔斯鲁厄市政污水处理厂的污泥（未被消化）	1‘640 kg/h
来自卡尔斯鲁厄市政污水处理厂的筛余物	80 kg/h
来自一生物废弃物发酵工厂的轻量物质	60 kg/h
来自其他市政污水处理厂的污泥（已消化）	420 kg/h
合共	2‘200 kg/h

Basic process flow diagram 基本工艺流程图



Advantages of the Raschka Fluidized Bed Technology
拉斯卡流化床技术的优势：

- ✓ **Efficient, proven, reliable**
  高效、成熟、可靠

- ✓ **Environmentally friendly**
  环境友好

- ✓ **Auto-thermal process without additional fuel**
  自持焚烧，无需额外添加燃料

- ✓ **Energy recovery**
  能源回收

- ✓ **Energy utilization for the process, power generation, heating**
  为工艺过程、发电及供热提供能源

- ✓ **The emission limits (17.BImSchV / Directive 2000/76/EC) are kept reliably**
  持续达到排放标准**(17.BImSchV / Directive 2000/76/EC)**

- ✓ **Experience: NO_2 - limits are kept without any NO_x reducing measures (e.g. SNCR)**
  经验：不需要任何降低**NOx**的措施（如：**SNCR**非选择性催化还原）即可保证**NO_2**的极低排放浓度

Thank you for your kind attention !

谢谢 !







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